TRANSPORT & INFRASTRUCTURE COMMITTEE

Date:Wednesday, 12 January 2022

Democratic Services

Robert Parkin Dip. LG.
Chief Legal Officer and Monitoring Officer

72 Market Street
Ely
Cambridgeshire
CB7 4LS

10:00 AM

Multi- Function Room, New Shire Hall, Emery Crescent, Enterprise Campus, Alconbury Weald, Huntington PE28 4YE.
[Venue Address]

AGENDA

Open to Public and Press

Part 1: Governance Items

1.4 Public Questions

Arrangements for public questions can be viewed in Chapter 5, Paragraphs 18 to 18.16 of the Constitution which can be viewed here - Constitution

Part 2: Delivery

2.1	**Fengate Access Study**	**51 - 56**
2.2	**Fengate Phase 2 University of Peterborough Access**	**57 - 212**
2.3	**A10 Outline Business Case**	**213 - 216**
2.4	**A141 Huntingdon & St Ives Strategic Outline Business Case**	**217 - 230**
2.5	**Local Transport & Connectivity Plan Update**	**231 - 234**
2.6	**Performance and Finance Report - January 2022**	**235 - 242**

Part 3: Date of Next Meeting

14th March 2022

COVID-19

The legal provision for virtual meetings no longer exists and meetings of the Combined Authority therefore take place physically and are open to the public. Public access to meetings is managed in accordance with current COVID-19 regulations and therefore if you wish to attend a meeting of the Combined Authority, please contact the Committee Clerk who will be able to advise you further.

The Transport & Infrastructure Committee comprises the following members:

For more information about this meeting, including access arrangements and facilities for people with disabilities, please contact

Mayor Dr Nik Johnson

Councillor Ian Bovingdon

Councillor Neil Gough

Councillor Peter Hiller

Councillor Jon Neish

Councillor Chris Seaton

Councillor Neil Shailer

Councillor Katie Thornburrow

Clerk Name:	Daniel Snowdon
Clerk Telephone:	01223 699177
Clerk Email:	Daniel.Snowdon@cambridgeshire.gov.uk

Cambridgeshire and Peterborough Combined Authority Transport and Infrastructure Committee: Minutes

Date: 8th November 2021

Time: 10.00am – 11.20am

Present: Nik Johnson (Mayor and Chairman), Councillors Ian Bovingdon, Neil Gough, Peter Hiller, Jon Neish, Chris Seaton, Neil Shailer, and Katie Thornburrow.

Apologies: Councillor Jocelynne Scutt

24. Apologies and declarations of interest

Apologies were received from Councillor Scutt, substituted by Councillor Thornburrow.

There were no declarations of interest.

The Mayor welcomed Councillor Ian Bovingdon to the Committee who replaced Councillor Joshua Schumann as the East Cambridgeshire District Council representative on the Committee.

25. Minutes – 8th September 2021 and Action Log

The minutes of the meeting on 8th September 2021 were approved as an accurate record and signed by the Mayor subject to a minor amendment where the phrase ‘horse before the cart’ should read ‘cart before the horse’.

The action log was noted.

26. Combined Authority Forward Plan

The Combined Authority Forward Plan was noted.

Commenting on the forward plan a member highlighted the A141 and St Ives Strategic Outline Business Case noting that there had been delay. Officers explained that following a meeting with Huntingdonshire District Council officers there was technical information that needed to be finalised ahead of a formal report being presented.

With regard to comments contained within the ‘Riverporter’ local publication, work would be undertaken with the Communications Team to ensure clarity was provided. **ACTION**

With regard to zero emission busses, Members noted that there would be 30 buses that would be zero emissions that represented around 9% of the fleet. The routes chosen were based on making the most impact on air pollution and would replace the most polluting vehicles in the fleet. The proposal represented the beginning of the electrification of the network.

A question relating to the Forward Plan had been received from the Overview and Scrutiny Committee as follows:

Could the Forward Plan be refreshed? Evidence of the need to do this is in next Monday's meeting where the majority of items that were to be discussed had been deferred.

The Mayor explained that the forward plan was refreshed monthly to ensure sufficient notice of decisions being taken. The Head of Transport commented further regarding the items that had been deferred, informing the Committee that items had been deferred in order to ensure that the reports presented contained all the information required for a decision and to ensure the Committee had sight of them before presentation to the Board.

27. Public questions

There were no public questions received. Three questions had been received from the Overview and Scrutiny Committee and were taken under the relevant agenda item.

28. Performance and Finance Report

The Committee received the November Performance and Finance report which presented the progress to date made against budgets set in January 2021.

Two questions had been received from the Overview and Scrutiny Committee as follows:

In the Performance Report there would appear to be the likelihood of significant underspends. Will this money be lost?; and

In the Performance Dashboard in some cases the data seems significantly out of date. What is the benefit of presenting this and can we be reassured the new Chief Exec will review the data that is circulated?

Responding to the questions the Head of Transport informed the Committee that there was a risk of significant underspend and was reported as such that showed the performance monitoring was effective. There were many reasons as to potential underspends such as slippage in project timescales and how risk was factored into the cost of projects. The money resulting from an underspend would not be lost. If there was a slippage in a scheme, then it would be reported to the relevant Committee and Board. Projects would follow the gateway process at Committee and Board at significant milestones for decision as to whether the project proceeds to the next stage. Therefore, there were underspends associated within the gateway process, the

reporting of which were being reviewed. Efficiencies that had been found would be spent on other areas including promoting sustainable transport.

In presenting the report the Committee noted that within the revenue programme:

- Bus service implementation that was showing no spend to date was deliberate choice and reflected that the improvement plan had only just been submitted to the Department for Transport.

- The cessation of the Cambridgeshire Autonomous Metro (CAM) programme had been approved by the Board and there was no revenue expenditure anticipated.

- Local transport connectivity was progressing as planned for delivery. No spending had been reflected due to the August outturn; however, spending had taken place since then.

- Figures relating to passenger transport were again on profile due how the timing of invoices and payments were administered.

Members noted the variances within the Capital Programme including:

- The A10, where there was a delay in the funding decision from the Department for Transport (DfT). A way forward now being developed with Cambridgeshire County Council for the next gateway review with DfT in September 2022.

- Expenditure relating to the CAM was reported in error.

During the course of discussion:

- A Member welcomed the Soham Station scheme that was being delivered ahead of schedule and hoped that it would encourage further railway stations to be developed, however, expressed disappointment that a line to Haverhill was not agreed as part of the funding review.

- Clarification was sought regarding Wisbech Rail and the way forward for the scheme. It was confirmed that the CPCA remained committed to the line. There had been a slight delay due to a report from Network Rail. It was anticipated that a report would be brought to the Committee and the CPCA Board in the new year.

- It was noted that the Snailwell Loop had been discussed with Network Rail. Engagement would continue with Network Rail as it was important that such resilience was built into the network.

- The Committee noted that the LTCP had been presented to leaders at various events and engagement planned for the coming weeks.

- A Member highlighted forward connectivity as a sustainable transport issue. Access across the river Nene for cycling was difficult and therefore parents had no

real alternative to driving children to school in Wisbech. It was noted that LTN 120 was being incorporated within projects and segregated cycling and walking routes should be considered fully when projects were developed so that sustainable transport options were promoted.

- A Member highlighted the increasing costs of construction and labour costs where large contractors were struggling to find the necessary labour. It was essential that the Government extend its visa scheme to construction workers. Need to work more collaboratively as consortiums in order that construction companies could spread risk more effectively.

- Noted the support for the Ely Area Capacity Enhancements and Fen Road. Engagement was undertaken with Network Rail. The Combined Authority were committed to continuing to influence to protect the Queen Adelaide environment. Development at Fen Road was currently a proposed development and had not been committed to by Network Rail. The Combined Authority would continue to engage with Network Rail on such schemes.

- Noted that it was anticipated the Fenland Walking and Mobility Strategy was being developed and would likely be ready in the new year.

It was resolved to:

Note the November Budget and Performance Monitoring Update.

29. March Area Transport Study Outline Business Case

The Committee received a report that summarised the work on the March Area Transport Strategy (MATS) project to date and outlined the next stage for the project, including a Full Business Case and a Detailed Design.

Commenting on the report Members:

- Highlighted the renovation of March High Street.

- Noted the importance in relation to the delivery of the Local Plan. The delivery of infrastructure was essential for successful delivery of housing and jobs and the wellbeing of the area.

- Noted the links with the Future Highstreets Fund, as there were areas of minor deprivation in March the proposals would assist in addressing.

The Mayor, in conclusion highlighted the report as an example of the Combined Authority identifying alternative funding streams to deliver on its objectives. The Mayor also drew attention to a minor amendment to recommendation b) that should have sought the approval for the drawdown of £1.51m.

It was proposed by Councillor Seaton, seconded by Councillor Thornburrow, and resolved unanimously to:

a) Note the March Area Transport Study Outline Business Case outcomes

b) Recommend that the Combined Authority Board approve the drawdown of £1.5**1** million for production of the Full Business Case and detailed design.

30. A1260 Nene Parkway Junction 15

The Committee received a report on the outcomes of the Full Business Case (FBC) regarding the A1260 Nene Parkway Junction 15. Provides access to major employment centre. Business case is at Appendix 1.

During discussion, the following points were raised:

- Peterborough had an enviable parkway system. However, it was designed and built for the traffic levels of 40 years ago. The growth of the city together with wear and tear on the roads made the work essential.

- Noted and welcomed improvements for nature, biodiversity and provision for disabled people using sustainable travel.

- Attention was drawn to the primary objectives of the scheme, commenting that they could be achieved through a trams scheme or other mass transit methods. Officers explained that the scheme represented one element of an overall connectivity strategy. The junction was a vital link for through traffic and congestion had a significant impact on the wider area. The scheme was partially congestion relieve but also part of an overall vision that was being developed that would seek to address other challenges.

- Noted the compelling economic case and the support of the local community outlined in the report, highlighting that there had been no objections to the proposals or comments received during the consultation.

- Attention was drawn to the proposed relocation of the footbridge, that while appearing sensible, did impinge on several residents and sought assurance regarding the communications that had taken place with them. Officers informed the Committee that those affected residents had been contacted and although there was no requirement to hold a consultation, further communications with residents were being developed.

- Noted the comments of Councillor Hiller whose Ward was close that affected and provided assurance that local Members had shared designs for the proposed bridge relocation with residents and productive discussions had taken place

It was proposed by Councillor Hiller, seconded by Councillor Seaton, and resolved unanimously to:

a) Recommend that the Combined Authority approve the Full Business Case

b) Recommend that the Combined Authority Board approve an allocation of £3.014m from its capital reserves to increase the current subject to approval budget from £5m to the forecast construction cost of £8.014m

c) Recommend that the Combined Authority Board approve the total £8.014m for the construction phase of the project including the re-profiling of the project budget.

Mayor

CAMBRIDGESHIRE
& PETERBOROUGH
COMBINED AUTHORITY

Cambridgeshire and Peterborough Combined Authority Forward Plan of Executive Decisions

Published 3 December 2021

The Forward Plan is an indication of future decisions. Please note that it is subject to continual review and may be changed in line with any revisions to the priorities and plans of the CPCA. It is re-published on a monthly basis to reflect such changes.

Purpose

The Forward Plan sets out all of the decisions which the Combined Authority Board and Executive Committees will be taking in the coming months. This makes sure that local residents and organisations know what decisions are due to be taken and when.

The Forward Plan is a live document which is updated regularly and published on the Combined Authority website (click the Forward Plan' button to view). At least 28 clear days' notice will be given of any key decisions to be taken.

What is a key decision?

A key decision is one which, in the view of the Overview and Scrutiny Committee, is likely to:

i. result in the Combined Authority spending or saving a significant amount, compared with the budget for the service or function the decision relates to (usually £500,000 or more); or
ii. have a significant effect on communities living or working in an area made up of two or more wards or electoral divisions in the area.

Non-key decisions and update reports

For transparency, the Forward Plan also includes all non-key decisions and update reports to be considered by the Combined Authority Board and Executive Committees.

Access to reports

A report will be available to view online one week before a decision is taken. You are entitled to view any documents listed on the Forward Plan after publication, or obtain extracts from any documents listed, subject to any restrictions on disclosure. There is no charge for viewing the documents, although charges may be made for photocopying or postage. Documents listed on this notice can be requested from Robert Parkin, Chief Legal Officer and Monitoring Officer for the Combined Authority.

The Forward Plan will state if any reports or appendices are likely to be exempt from publication or confidential and may be discussed in private. If you want to make representations that a decision which it is proposed will be taken in private should instead be taken in public please contact Robert Parkin, Chief Legal Officer and Monitoring Officer at least five working days before the decision is due to be made.

Notice of decisions

Notice of the Combined Authority Board's decisions and Executive Committee decisions will be published online within three days of a public meeting taking place.

Standing items at Executive Committee meetings

The following reports are standing items and will be considered by at each meeting of the relevant committee. The most recently published Forward Plan will also be included on the agenda for each Executive Committee meeting:

Housing and Communities Committee

1. Affordable Housing Programme Update

Skills Committee

1. Budget and Performance Report
2. Employment and Skills Board Update

Transport and Infrastructure Committee

1. Budget Monitor Update
2. Performance Report

Housing and Communities Committee – 10 January 2022

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
1.	Affordable Housing Programme Scheme Approvals January 2022	Housing and Communities Committee	10 January 2022	Key Decision 2021/038	To consider and approve allocations to new schemes within the Affordable House Programme.	Relevant internal and external stakeholders	Roger Thompson Director of Housing and Development	Councillor Lewis Herbert Lead Member for Housing	It is not anticipated that there will be any documents other than the report and relevant appendices.
2.	Community Housing	Housing and Communities Committee	10 January 2022	Decision	To note the current position in respect of providing support to community housing groups.	Relevant internal and external stakeholders	Roger Thompson Director of Housing and Development	Councillor Lewis Herbert Lead Member for Housing	It is not anticipated that there will be any documents other than the report and relevant appendices.
3.	Digital Connectivity	Housing and Communities Committee	10 January 2022	Decision	To consider the refreshed Business Plan and proposal to	Relevant internal and external stakeholders	Paul Raynes Director of Strategy	Mayor Dr Nik Johnson	It is not anticipated that there will be any

					approve the budget for the next three years of delivery and make recommendations to the Combined Authority Board.				documents other than the report and relevant appendices.

Transport and Infrastructure Committee – 12 January 2022

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
4.	Local Transport Plan Update	Transport and Infrastructure Committee	12 January 2022	Decision	To provide an update on the Local Transport Plan refresh following consultation.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.
5.	University Access Study	Transport and Infrastructure Committee	12 January 2022	Decision	To consider recommendations on the Outline Business Case Phase 1 and outline next steps	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
					and make recommendations to the Combined Authority Board.				the report and relevant appendices.
6.	Fenland Stations Regeneration	Transport and Infrastructure Committee	12 January 2022	Decision	To give an update on construction completion of March and Manea stations as part of the Fenland Stations Regeneration programme.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.
7.	England's Economic Heartlands Peterborough-Northampton-Oxford Connectivity Study	Transport and Infrastructure Committee	12 January 2022	Decision	To agree the outputs of the England's Economic Heartland's Peterborough-Northampton-Oxford connectivity study.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
									to be published.
8.	St Ives Strategic Outline Business Case	Transport and Infrastructure Committee	12 January 2022	Decision	To review outcomes from the Strategic Outline Business Case and next steps and make recommendations to the Combined Authority Board.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.
9.	A141 Strategic Outline Business Case	Transport and Infrastructure Committee	12 January 2022	Decision	To review outcomes from the Strategic Outline Business Case and make recommendations of next steps to the Combined Authority Board.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
									to be published.
10.	Wisbech Rail Update	Transport and Infrastructure Committee	12 January 2022	Decision	To provide an update on the project and outline next steps.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.
11.	A10 Outline Business Case	Transport and Infrastructure Committee	12 January 2022	Decision	To update the committee on the programme and arrangements for development of the Outline Business Case for the A10.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
									to be published.
12.	Fengate Phase 1	Transport and Infrastructure Committee	12 January 2022	Decision	To consider the recommendation to use £180,000 from the subject to approval budget to develop the design further and make recommendations to the Combined Authority Board.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published
13.	Peterborough City Centre Transport Vision Phase 1	Transport and Infrastructure Committee	12 January 2022	Decision	To consider funding proposals for the delivery of the first phase in the development of the Peterborough City Centre Transport Vision and make recommendations	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
					to the Combined Authority Board.				to be published

Skills Committee – 17 January 2022

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
14.	Growth Works Management Review – January 2022	Skills Committee	17 January 2022	Decision	To monitor and review programme delivery and performance and make recommendations to the Combined Authority Board.	Relevant internal and external stakeholders including the Business Board	John T Hill, Director of Business & Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published

15.	Local Skills Report Refresh	Skills Committee	17 January 2022	Decision	To update Committee Members on the Local Skills Report.	Relevant internal and external stakeholders	John T Hill, Director of Business & Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published
16.	University of Peterborough – Programme Business Case	Skills Committee	17 January 2022	Decision	To consider the Programme Business Case for the University of Peterborough and make recommendations to the Combined Authority Board.	Relevant internal and external stakeholders	John T Hill, Director of Business & Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published
17.	University of Peterborough Phase 3 Full Business Case (FBC)	Skills Committee	17 January 2022	Decision	To consider the Full Business Case (FBC) for Phase 3 of the University of Peterborough and make recommendations	Relevant internal and external stakeholders	John T Hill, Director of Business & Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant

					to the Combined Authority Board.				appendices to be published
18.	Adult Education Budget Evaluation 2020/21 and Annual Return	Skills Committee	17 January 2022	Decision	To approve the Adult Education Budget Annual Return and to note the Evaluation.	Relevant internal and external stakeholders	John T Hill Director of Business and Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.
19.	Digital Skills Bootcamps Update	Skills Committee	17 January 2022	Decision	To update the Committee on the progress with the Digital Bootcamps contract.	Relevant internal and external stakeholders	John T Hill Director of Business and Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.
20.	Health and Care Sector Work Academy	Skills Committee	17 January 2022	Decision	To consider proposals to approve the reprofiling of	Relevant internal and external stakeholders	John T Hill Director of Business and Skills	Councillor Lucy Nethsingha	It is not anticipated that there will be any

					spend for the Health and Care Sector Work Academy and make recommendations to the Combined Authority Board.			Lead Member for Skills	documents other than the report and relevant appendices to be published.
21.	Economic and Skills Insight Report	Skills Committee	17 January 2022	Decision	To note the Economic and Skills Insight Report.	Relevant internal and external stakeholders	John T Hill Director of Business and Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.
22.	Employment and Skills Strategy and Action Plan	Skills Committee	17 January 2022	Decision	To consider the Employment and Skills Strategy and Action Plan and make recommendations to the Combined Authority Board.	Relevant internal and external stakeholders	John T Hill Director of Business and Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.

Combined Authority Board – 26 January 2022

Governance Items

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
23.	Minutes of the meeting on 24 November 2021 and Action Log	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To approve the minutes of the previous meeting and review the action log.	Relevant internal and external stakeholders	Richenda Greenhill, Democratic Services Officer	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.
24.	Combined Authority Membership Update	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To note changes to Combined Authority membership.	Relevant internal and external stakeholders	Robert Parkin Chief Legal Officer and Monitoring Officer	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.
25.	Annotated Forward Plan	Cambridgeshire and Peterborough	26 January 2022	Decision	To approve the latest version of the forward plan.	Relevant internal and external stakeholders	Robert Parkin Chief Legal Officer and	Mayor Dr Nik Johnson	It is not anticipated that there will be any

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
		Combined Authority Board					Monitoring Officer		documents other than the report and relevant appendices.
26.	Budget Monitor Update	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To provide an update on the revenue and capital budgets for the year to date.	Relevant internal and external stakeholders	Jon Alsop Section 73 Chief Finance Officer	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.
27.	2022-23 Budget and Medium-Term Financial Plan to 2025-26	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Key Decision 2021/060	To set a balanced budget for the forthcoming financial year as required by law, and a medium-term financial plan	Relevant internal and external stakeholders	Jon Alsop Section 73 Chief Finance Officer	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
					for the next four years.				to be published.
28.	Mayor's Budget 2022-23	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Key Decision 2021/061	To agree the Mayor's draft budget for 2022-23.	Relevant internal and external stakeholders	Jon Alsop Section 73 Chief Finance Officer	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.
29.	Performance Report	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To agree future performance reporting arrangements to the Board in support of the new Business Plan and Medium-Term Financial Plan.	Relevant internal and external stakeholders	Paul Raynes Director of Strategy	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
30.	Devolution Deal Update	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To note the update against Devolution Deal Commitments.	Relevant internal and external stakeholders	Paul Raynes Director of Strategy	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.
31.	Annual Report and Business Plan 2022/23	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To approve the 2022/23 Business Plan.	Relevant internal and external stakeholders	Paul Raynes Director of Strategy	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.

Combined Authority Decisions

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
32.	Market Towns Programme: Reprofiling of Budget	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Key Decision 2021/069	To approve the reprofiling of budget for the Market Towns Programme.	Relevant internal and external stakeholders	John T Hill Director of Business and Skills	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.
33.	Greater South East Energy Hub: Mobilisation of Schemes and Reprofiling of Budget	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Key Decision 2021/071	To approve the Business Plan for mobilising and deploying the Local Authority Delivery (LAD) 3 and Sustainable Warmth schemes and approve the reprofiling of budget for the Greater South East Energy Hub.	Relevant internal and external stakeholders	John T Hill Director of Business and Skills	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.

By recommendation to the Combined Authority Board

Recommendations from the Transport and Infrastructure Committee

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
34.	University Access Study	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Key Decision 2021/031	To consider recommendations on the Outline Business Case Phase 1 and outline next steps.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.
35.	Peterborough City Centre Transport Vision Phase 1	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Key Decision 2021/076	To request funding for the delivery of the first phase in the development of the Peterborough City Centre Transport Vision.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
36.	St Ives Strategic Outline Business Case	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To review outcomes from the Strategic Outline Business Case and recommended next steps.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.
37.	A141 Strategic Outline Business Case	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To review outcomes from the Strategic Outline Business Case and recommendations on next steps.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
38.	Fengate Phase 1	Cambridgeshire and Peterborough Combined Authority Board	22 January 2022	KD2021/067	To update the Board on the progress made on Fengate Phase 1 and seek approval to use £180,000 from the subject to approval budget to develop the design further**.**	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published
39.	Wisbech Rail Update	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To provide an update on the project and outline next steps.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.

Recommendations from the Skills Committee

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
40.	University of Peterborough – Programme Business Case	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To approve the Programme Business Case for the University for Peterborough.	Relevant internal and external stakeholders	John T Hill, Director of Business & Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published
41.	University of Peterborough Phase 3 Full Business Case (FBC)	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Key Decision 2021/064	To approve the Full Business Case (FBC) for Phase 3 of the University of Peterborough.	Relevant internal and external stakeholders	John T Hill, Director of Business & Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published

42.	Employment and Skills Strategy and Action Plan	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Key Decision 2021/077	To approve the Employment and Skills Strategy and Action Plan.	Relevant internal and external stakeholders	John T Hill Director of Business and Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.
43.	Growth Works Management Review – January 2022	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To monitor and review programme delivery and performance.	Relevant internal and external stakeholders including the Business Board	John T Hill, Director of Business & Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published
44.	Health and Care Sector Work Academy	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Key Decision 2021/068	To consider proposals to approve the reprofiling of spend for the Health and Care Sector Work Academy and make recommendations	Relevant internal and external stakeholders	John T Hill Director of Business and Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and

					to the Combined Authority Board.				relevant appendices to be published.

Recommendations from the Housing and Communities Committee

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
45.	Digital Connectivity	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Key Decision 2021/074	To consider the refreshed Business Plan and approve the budget for the next three years of delivery.	Relevant internal and external stakeholders	Paul Raynes Director of Strategy	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.

Recommendations from the Business Board

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the

									decision maker
46.	Business Board Appointments	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To confirm the appointment of new Business Board members.	Relevant internal and external stakeholders including the Skills Committee	John T Hill, Director of Business & Skills	Austen Adams Chair of the Business Board	It is not anticipated that there will be any documents other than the report and relevant appendices to be published
47.	The Role of the Business Board	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To approve proposed changes on the mandated role of the Business Board to share its views, manage and make recommendations to the Combined Authority Board.	Relevant internal and external stakeholders	John T Hill, Director of Business & Skills	Austen Adams Chair of the Business Board	It is not anticipated that there will be any documents other than the report and relevant appendices to be published
48.	Strategic Funding Management Review – January 2022	Cambridgeshire and Peterborough Combined Authority Board	26 January 2022	Decision	To monitor and review programme performance, evaluation,	Relevant internal and external stakeholders	John T Hill, Director of Business & Skills	Austen Adams Chair of the Business Board	It is not anticipated that there will be any documents other than

					outcomes and risks.				the report and relevant appendices to be published
49.	Local Assurance Framework	Cambridgeshire and Peterborough Combined Authority Board	26 January 2021	Decision	To approve the revised Local Assurance Framework.	Relevant internal and external stakeholders, including the Audit and Governance Committee	John T Hill Director of Business and Skills	Austen Adams Chair of the Business Board	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.

Housing and Communities Committee – 9 March 2022

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
50.	Affordable Housing Programme Scheme Approvals	Housing and Communities Committee	9 March 2022	Key Decision 2021/039	To consider and approve allocations to new schemes within the Affordable House Programme.	Relevant internal and external stakeholders	Roger Thompson Director of Housing and Development	Councillor Lewis Herbert Lead Member for Housing	It is not anticipated that there will be any documents other than

	March 2022								the report and relevant appendices.
51.	Future Combined Authority Housing Purpose and Function beyond March 2022	Housing and Communities Committee	9 March 2022	Decision	To consider the likely activities and options for the future of the Combined Authority Housing activity and programme beyond March 2022 and make recommendations to the Combined Authority Board.	Relevant internal and external stakeholders	Roger Thompson Director of Housing and Development	Councillor Lewis Herbert Lead Member for Housing	It is not anticipated that there will be any documents other than the report and relevant appendices.
52.	Northern Fringe Progress Report	Housing and Communities Committee	9 March 2022	Decision	To receive a progress report on the Northern Fringe.	Relevant internal and external stakeholders	Roger Thompson Director of Housing and Development	Councillor Lewis Herbert Lead Member for Housing	It is not anticipated that there will be any documents other than the report and relevant appendices.

Transport and Infrastructure Committee – 14 March 2022

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
53.	Local Transport Plan 2022	Transport and Infrastructure Committee	14 March 2022	Decision	To consider the Local Transport Plan refreshed document and make recommendations to the Combined Authority Board.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.
54.	A47 Dualling	Transport and Infrastructure Committee	14 March 2022	Decision	To summarise outcome of the Highways England Review and outline next steps.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.

Skills Committee – 16 March 2022

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
55.	Business and Skills Strategy	Skills Committee	16 March 2022	Decision	To consider the draft Business and Skills Strategy.	Relevant internal and external stakeholders	John T Hill, Director of Business & Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published
56.	Opportunities to develop the Greater South East Energy Hub	Skills Committee	16 March 2022	Decision	To note the opportunities for a green supply chain and skills requirements in the Cambridgeshire and Peterborough area.	Relevant internal and external stakeholders	John T Hill Director of Business and Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.

Combined Authority Board – 30 March 2022

Governance Items

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
57.	Minutes of the meeting on 26 January 2022 and Action Log	Cambridgeshire and Peterborough Combined Authority Board	30 March 2022	Decision	To approve the minutes of the previous meeting and review the action log.	Relevant internal and external stakeholders	Richenda Greenhill, Democratic Services Officer	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.
58.	Annotated Forward Plan	Cambridgeshire and Peterborough Combined Authority Board	30 March 2022	Decision	To approve the latest version of the forward plan.	Relevant internal and external stakeholders	Robert Parkin Chief Legal Officer and Monitoring Officer	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.
59.	Budget Monitor Update	Cambridgeshire and Peterborough	30 March 2022	Decision	To provide an update on the revenue and capital	Relevant internal and external stakeholders	Jon Alsop Section 73 Chief	Mayor Dr Nik Johnson	It is not anticipated that there will be any

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
		Combined Authority Board			budgets for the year to date.		Finance Officer		documents other than the report and relevant appendices to be published.

Combined Authority Decisions

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
60.	Opportunities to develop the Greater South East Energy Hub	Cambridgeshire and Peterborough Combined Authority Board	30 March 2022	Decision	To note the opportunities for a green supply chain and skills requirements in the Cambridgeshire and Peterborough area.	Relevant internal and external stakeholders	John T Hill, Director of Business & Skills	Austen Adams Chair of the Business Board	It is not anticipated that there will be any documents other than the report and relevant appendices to be published

By recommendation to the Combined Authority Board

Recommendations from the Transport and Infrastructure Committee

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker

61.	Local Transport Plan 2022	Cambridgeshire and Peterborough Combined Authority Board	30 March 2022	Key Decision 2021/033	To approve the Local Transport Plan refreshed document.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.
62.	A47 Dualling	Cambridgeshire and Peterborough Combined Authority Board	30 March 2022	Decision	To summarise outcome of the Highways England Review and outline next steps.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.

Recommendations from the Housing and Communities Committee

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
63.	Future Combined Authority Housing Purpose	Cambridgeshire and Peterborough Combined Authority Board	30 March 2022	Key Decision 2021/070	To consider the likely activities and options for the future of the Combined Authority Housing activity and	Relevant internal and external stakeholders	Roger Thompson Director of Housing and Development	Councillor Lewis Herbert	It is not anticipated that there will be any documents

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
	and Function beyond March 2022				programme beyond March 2022.			Lead Member for Housing	other than the report and relevant appendices.

Recommendations from the Skills Committee

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
64.	Business and Skills Strategy	Cambridgeshire and Peterborough Combined Authority Board	30 March 2022	Decision	To approve the draft Business & Skills Strategy	Relevant internal and external stakeholders including the Skills Committee	John T Hill, Director of Business & Skills	Councillor Lucy Nethsingha Lead Member for Skills	It is not anticipated that there will be any documents other than the report and relevant appendices

									to be published

Recommendations from the Business Board

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
65.	Combined Authority Implications of the Local Enterprise Partnership Review	Cambridgeshire and Peterborough Combined Authority Board	30 March 2022	Decision	To note the outcomes of Government's national Local Enterprise Partnership (LEP) Review.	Relevant internal and external stakeholders	John T Hill, Director of Business & Skills	Austen Adams Chair of the Business Board	It is not anticipated that there will be any documents other than the report and relevant appendices to be published
66.	Enterprise Zones Programme Update	Cambridgeshire and Peterborough Combined Authority Board	30 March 2022	Decision	To update the Board on the Enterprise Zones Programme.	Relevant internal and external stakeholders	John T Hill, Director of Business & Skills	Austen Adams Chair of the Business Board	It is not anticipated that there will be any documents other than the report and relevant

									appendices to be published
67.	Growth Works Inward Investment Service – request for recycled Local Growth Funds	Cambridgeshire and Peterborough Combined Authority Board	30 March 2021	Key Decision 2021/055	To approve the use of recycled Local Growth Funds to be reinvested into the Inward Investment Service line within the Growth Works contract.	Relevant internal and external stakeholders	John T Hill Director of Business and Skills	Austen Adams Chair of the Business Board	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.
68.	Digital Sector Strategy	Cambridgeshire and Peterborough Combined Authority Board	30 March 2022	Decision	To approve and adopt the Digital Sector Strategy for Cambridgeshire and Peterborough.	Relevant internal and external stakeholders	John T Hill, Director of Business & Skills	Austen Adams Chair of the Business Board	It is not anticipated that there will be any documents other than the report and relevant appendices to be published

Transport and Infrastructure Committee

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
69.	Bus Reform April 2022	Transport and Infrastructure Committee	25 April 2022	Decision	To provide an update on the results of the Bus Reform Outline Business Case public consultation and next steps and make recommendations to the Combined Authority Board.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.

Combined Authority Board Annual Meeting – 1 June 2022

Governance items

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker

70.	Minutes of the meeting on 30 March 2022 and Action Log	Cambridgeshire and Peterborough Combined Authority Board	1 June 2022	Decision	To approve the minutes of the previous meeting and review the action log.	Relevant internal and external stakeholders	Richenda Greenhill, Democratic Services Officer	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.
71.	Annotated Forward Plan	Cambridgeshire and Peterborough Combined Authority Board	1 June 2022	Decision	To approve the latest version of the forward plan.	Relevant internal and external stakeholders	Robert Parkin Chief Legal Officer and Monitoring Officer	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.
72.	Budget Monitor Update	Cambridgeshire and Peterborough Combined Authority Board	1 June 2022	Decision	To provide an update on the revenue and capital budgets for the year to date.	Relevant internal and external stakeholders	Jon Alsop Section 73 Chief Finance Officer	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices to be published.

Recommendations from the Transport and Infrastructure Committee

	Title of report	Decision maker	Date of decision	Decision required	Purpose of report	Consultation	Lead officer	Lead Member	Documents relevant to the decision submitted to the decision maker
73.	Bus Reform June 2022	Cambridgeshire and Peterborough Combined Authority Board	1 June 2022	Key Decision 2021/045	To provide an update on the results of the Bus Reform Outline Business Case public consultation and next steps.	Relevant internal and external stakeholders	Rowland Potter Head of Transport	Mayor Dr Nik Johnson	It is not anticipated that there will be any documents other than the report and relevant appendices.

Comments or queries about the Forward Plan to Cambridgeshire and Peterborough Combined Authority

Please send your comments or queries to Robert Parkin, Chief Legal Officer and Monitoring Officer. We need to know:

1. Your comment or query:
2. How can we contact you with a response (please include your name, a telephone number and your email address).
3. Who you would like to respond to your query (if you are unsure please leave this blank and it will be assigned to the person best placed to reply).

CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY

Agenda Item No:

Report title: Fengate Phase 1 Full Business Case

To:	Transport and Infrastructure Committee
Meeting Date:	12 January 2022
Public report:	Public Report
Lead Member:	Mayor Dr Nik Johnson
From:	Rowland Potter
Key decision:	No
Forward Plan ref:	(For key decisions Democratic Services can provide this reference)
Recommendations:	What is the Board being asked to do? Where there is more than one recommendation, please use lower case letters as set out below: The Committee recommend the Combined Authority Board: a) Approve the drawdown of £150,000 to complete the Full Business Case stage of the project b) Approve the slippage of the remaining in-year subject to approval budget and note the need for a further reprofile exercise once the revised project timeframe is established in January.
Voting arrangements:	A simple majority of all Members present and voting

1. Purpose

1.2 To report work undertaken to date and Approve the drawdown of £150,000 to finish the Fengate Phase 1 project Full Business Case stage and reprofile the remaining subject to approval funds across future years.

2. Background

2.1 The Peterborough City Council Local Plan (adopted July 2019) sets out the overall vision, priorities and objectives for Peterborough up to 2036. The updated strategy identifies the required delivery of 19,440 new homes and 17,600 new jobs by 2036.

2.2 The largest employment allocation within Fengate is the Red Brick Farm site which covers 12.6 hectares. This is likely to be a mixture of B8 (Storage and Distribution) units and B2 (General Industry) units with ancillary B1 office space.

2.3 The Fengate Access Study Area focuses on the north of Fengate, where the Red Brick Farm site is located. The study area is shown in the figure below. It considers Junction 7 and Junction 8 of the A1139 Fletton Parkway (key access to / from the parkway system), access routes into Fengate such as Parnwell Way and Oxney Road, and internal roads within Fengate such as Edgerley Drain Road and Storey's Bar Road.

2.4 The study area is illustrated within **Figure 1** below.

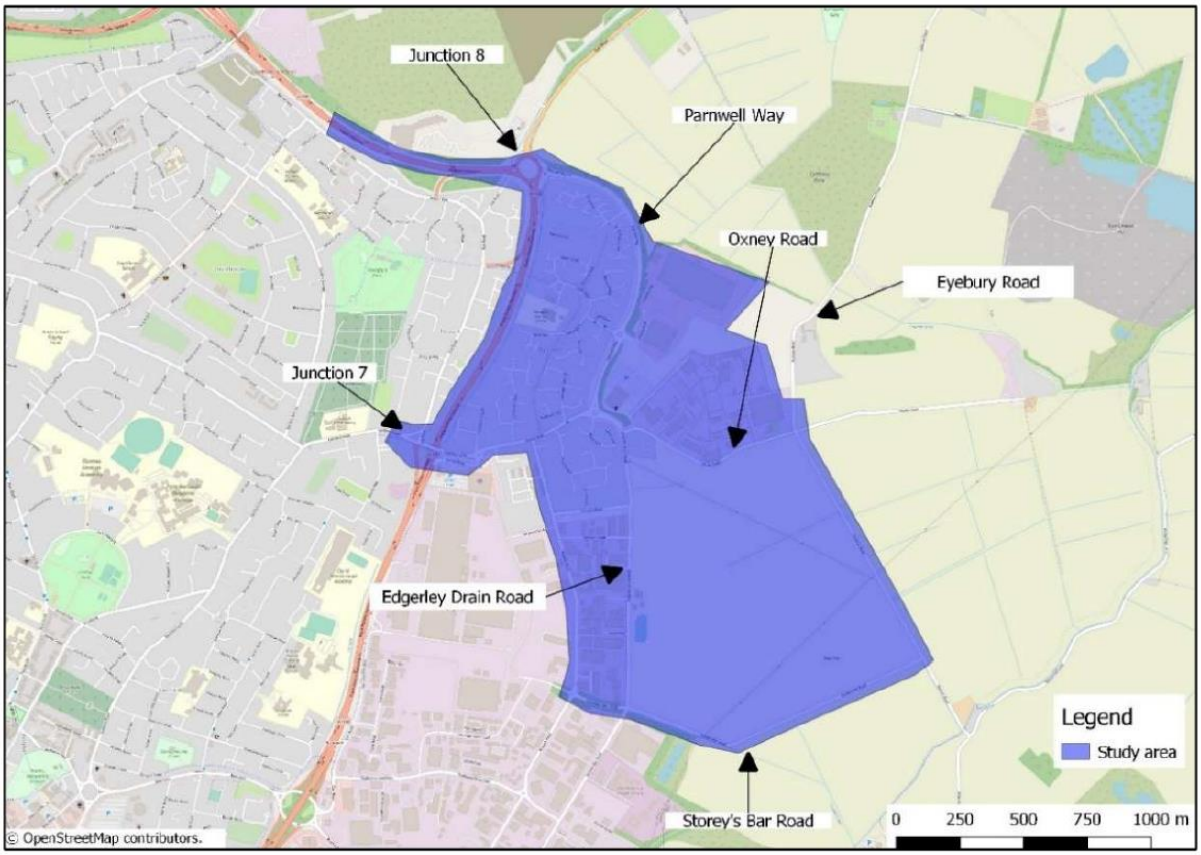

Figure 1 – Fengate Access Study Area

2.5 At the November 2020 Board the following recommendations were approved.

a) Strategic Outline Business Case
b) The commencement of the Full Business Case and detailed design stage

c) Approve the drawdown of £270,000 from the budget within the Medium-Term Financial Plan to develop the Full Business Case and detailed design

3. Full Business Case and Detailed Design

3.1 The Fengate Access Study package of schemes currently consists of:

- Edgerley Drain Road / Storey's Bar Road / Vicarage Farm Road Junction improvement
- A15 J20 to J8 southbound lane gain
- Newark Road Mini-Roundabout
- Newark Road footpath
- A1139 Junction 7 Junction improvements
- Edgerley Drain Road / Oxney Road Roundabout (developer funded / developer delivered)

3.2 Due to number of factors that have occurred this has meant additional highway design work is required. Peterborough City Council recognised this early on and were able to secure £175,000 of their own funding to support the project. However, an additional £150,000 is needed and is being requested from CPCA.

3.3 As the designs progressed and in light of the public consultation and the need to put in more Non-Motorised User infrastructure additional pedestrian improvements were included in the design including:

- Oxney Road Sainsburys Roundabout and new ped crossing
- Additional Pedestrian Crossing on Oxney Road
- Creation of a footpath on Newark Road.
- Design Maturity / Complexity

3.4 As the design work has progressed during this phase of work, the complexity of several of the schemes has increased due to a range of factors including changes to regulations (LTN 1/20) and developer engagement / proposals. These are explained in further detail beneath.

Edgerley Drain Road / Storey's Bar Road / Vicarage Farm Road

A number of factors have contributed towards the overall time/cost increases in the development of the design of this junction. The site itself has a number a constraints on all sides and not all of these constraints were apparent initially and have come to light as a result of surveys or STATS searches undertaken during this phase of work. Due to this the development of the scheme has been difficult and resulted in multiple iterations.
The original footway / cycleway proposal (by the developer) had to be realigned to the alternative side, the recent adoption of LTN 1/20 standards has also resulted in a significantly increased footprint of the original site, leading to additional design iterations and land acquisition requirements. This has consequently affected the re-design for the traffic signal layouts. In addition to this, delayed responses from the Utility companies and access to Red Brick Farm has resulted in design uncertainty, coupled with this was the late requirement for an archaeological watching brief due to the proximity of Flag Fen whilst these works were being undertaken. Accommodation of developer requirements for a new pedestrian crossing have also resulted in further design changes. All this has added unexpected costs to the project.

Newark Road Mini Roundabout.

The original intention was to simply move the pedestrian crossing further away from junction. After stakeholder consultation, two zebra crossings were proposed instead to better meet the needs of local pedestrian desire lines. Design of the scheme was therefore altered to include these two new features, adding additional cost.

A15 Lane Gain

Original design of the J20 to J8 Lane Gain scheme was done in conjunction with the J20 works previously). Following a design review, it became evident that further work was required due to changes in design regulations since the previous round of design work was undertaken. It was also identified that some areas of the design needed further input to reach Detailed Design level.

Junction 7

The original design work undertaken on this scheme had to be revisited in light of the latest growth figures forecast by the Fengate Access Study. This resulted in additional design input, including from traffic signal specialists Green Signals. The introduction of LTN 1/20 requirements also had a significant impact on the scheme design for Junction 7 and re-design following stakeholder consultation and Road Safety recommendations.

Environmental Works

Increased input from environmental advisors ensures that all schemes are environmentally compliant. Although this is clearly a positive addition to the project, it was not fully costed for during the budget setting phase last year. Some of the additional environmental works that have occurred on the Fengate Access Study schemes as a result of this additional input include, Water Vole surveys, Landscaping Proposals to achieve a target of 20% biodiversity net gain for all sites, and an archaeological watching brief for all survey works.

3.5 The programme will be re-forecast in January and this will confirm a revised end date which will include the technical approval of the FBC. This is currently expected to be in Q3 of 2022.

4. Significant Implications

4.1 None

5. Financial Implications

5.1 It is recommended therefore to ask the CPCA Board for the approval of the drawdown of £150,000 from the current for finishing the Detailed Design and production of the Full Business Case.

5.2 As the remaining £1.18m of ‘subject to approval’ budget currently profiled in 2021-22 will not be drawn down this year, the Board are asked to approve the slippage of this funding into the 2022-23 financial year and note that, following the programme re-forecast in January, the revised project delivery timeline will inform a further reprofiling of the ‘subject

to approval' budget across future years to be brought forward alongside the completed Full Business Case.

6. Legal Implications

6.1 None

7. Other Significant Implications

7.1 None

8. Appendices

8.1 None

9. Background Papers

9.1 None

CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY

Agenda Item No: 2.1

Report title: Fengate Phase 2 University of Peterborough Access

To:	Transport and Infrastructure Committee Meeting
Meeting Date:	12 January 2022
Public report:	Yes
Lead Member:	Mayor Dr Nik Johnson
From:	Rowland Potter, Head of Transport
Key decision:	No
Forward Plan ref:	N/A
Recommendations:	The Transport and Infrastructure Committee is invited to recommend the Combined Authority Board to: a) Approve the University of Peterborough Access Study Package Assessment Report – Outline Business Case Phase 1 b) Approve the drawdown of £1.8m in respect of the costs associated with the Outline Business Case Phase 2, and to conclude a Grant Funding Agreement with Peterborough City Council on terms approved by the Head of Transport and Chief Legal Officer/Monitoring Officer c) Approve the submission of the updated application at appendix 2 to the Department of Transport's Major Route Network Programme fund.
Voting arrangements:	Recommendations a), and c), a simple majority of all Members present and voting Recommendation b) is a vote in favour by at least two thirds of all Members (or their Substitute Members) appointed by the Constituent Councils, to include the Members appointed by Cambridgeshire County Council or Peterborough City Council, or their Substitute Members

1. Purpose

1.1 To provide a summary of the outcome of the Package Assessment Report – Outline Business Case Phase 1 and to seek approval to proceed with a reprofile of current subject to approval funds as per table 5.2, with a reimbursement of funds to the MTFP subject to DfT funding form the Major Road Network application.

1.2 To seek approval to submit the updated application to the Department for Transport's Major Route Network Programme fund for funding support to the Outline Business Case.

2. Background

2.1 The Peterborough Local Plan (adopted July 2019) sets out the overall vision, priorities, and objectives for Peterborough for the period up to 2036. It includes the establishment of a University in Peterborough and is being delivered by both the Combined Authority and Peterborough City Council.

2.2 The Embankment area is identified as an opportunity area by Peterborough City Council and is expected to attract significant growth in addition to the University.

2.3 The Fengate Phase 2 University Access Strategic Outline Business Case focused on the highway network near to the Embankment area, including Junction 5 of the A1139 Frank Perkins Parkway and the surrounding roads of Bishops Road, Vineyard Road, and Boongate. It also considered the southern part of Fengate and identified two options to address the existing problems of peak hour congestion and support the development of the Embankment area.

2.4 The two packages were similar with the main difference being that one package contained a proposed northbound off slip linking the A1139 Frank Perkins Parkway with the Bishop's Road. Whilst the other package proposed dualling of Boongate West between Junction 5 and Junction 39.

2.5 The Strategic Outline Business Case demonstrated that both Package 1 (northbound off slip) and Package 2 (dualling of Boongate) met the scheme objectives. The Economic Assessment demonstrated that Package 1 achieved Very High Value for Money with a Benefit Cost Ratio (BCR) of 5.2. Package 2 achieved Medium Value for Money with a BCR of 1.6. However, the SOBC concluded that with further additional Economic Assessment and design work the Value for Money for Package 2 was expected to increase. Whilst Package 1 operational impact to adjacent roads could be more fully explored.

2.6 At its meeting of 24 March 2021, the Combined Authority Board approved the commissioning of the Package Assessment-Outline Business Case Phase 1 to determine a preferred option.

3. Outcome of Package Assessment-Outline Business Case Phase 1

3.1 The Package Assessment Report undertook further assessment of both packages, including a review of policy, design, construction, environment, operational and economic performance.

3.2 However, since the University Access SOBC was completed, there have been two significant developments which effect the identification of a preferred package. The first, is the almost doubling of the number of students expected to attend ARU Peterborough by Phase 3, significantly effecting the number of trips destined to the Embankment area.

3.3 The second development is a change to the assumption in parking locations for the University. In the SOBC, it was anticipated that there would be a 300-space multi-storey car park on the Embankment, with additional parking provided in a new car park on Potters Way. As part of the Phase 2 planning application, it was agreed that there would be minimal additional on-site parking at the University. The main car park for the Embankment Area, including the University, will be a new multi-storey at Wellington Street.

3.4 Assessment of both packages showed that Package 2, the dualling of Boongate, has a very good strategic fit and operationally performs better than Package 1. Package 2 provides a high-capacity route, which compliments the proposed multi -storey at Wellington Steet and significantly reducing the number of trips on the routes around the Embankment area. Whist Package 1, northbound off slip, delivered high volumes of traffic on to a low-capacity network and did not demonstrate a strategic fit.

3.5 Neither package provided significant challenges, in terms of design and construction. However, the environmental assessment showed Package 2 to perform slightly better, at Amber/Green, compared to Package 1 at Amber.

3.6 An Economic Assessment was undertaken on both packages using updated cost information from the latest design phase and incorporating the latest assumptions from the University Planning Application.

3.7 The Economic Assessment demonstrated that Package 2 provides a much greater Benefit to Cost Ratio than Package 1. The updated BCRs are,

Package	**BCR**	**Value for Money Statement**
Package 1	0.4	Poor Value for Money
Package 2	2.4	High Value for Money

3.8 This reverses the results from the assessment at SOBC, when Package 1 achieved a much higher value for money than Package 2. This is as a result of changes to modelling assumptions, due to either design changes or new information regarding parking provision. Most significantly, the assumption that Wellington Street Car Park will accommodate many of the future trips drastically affects the benefits that Package 1 provides, whilst Package 2 is well placed to accommodate these trips.

3.9 The Package Assessment Report has undergone the independent third-party review which has confirmed that the BCR and report have been appropriately developed.

4. Next Steps

4.1 If approved, the updated application form will be submitted to the DfT for consideration for the Major Route Network Programme fund. DfT are already in receipt of the SOBC and the approved Package Assessment Report will now be submitted to support the updated application.

4.2 An initial programme for the Outline Business Case has it starting in April 2022 and completing July 2023. The request seeks support for a change in the profile and drawdown dates of the current subject to approval funds with a reimbursement to the MTFP if funding is secured from the MRN application to DfT.

5. Financial Implications

5.1 The updated application for DfT outlines the financial request being made, including the requirement for local funding contribution of approximately one third of the cost.

5.2 The table below details the costs for the Outline Business Case phase.

Package 2	**2022/23**	**2023/24**	**TOTAL**
Funding sought from DfT	£894,922	£298,308	**£1,193,230**
Local funding	£477,462	£149,154	**£596,615**
TOTAL	£1,342,384	£447,462	**£1,789,846**

5.3 The MTFP includes £1.94m of 'subject to approval' budget for the OBC phase of the project, this paper seeks support for the approval of £1.8m of this funding, split across the next two financial years as detailed in the table above.

5.4 The £140k difference between the £1.8m cost of the OBC and the £1.94m 'subject to approval' funds is an effective saving to the Combined Authority and will be returned to the organisations reserves. However, it should be noted that there is no provision in the CPCA's budget to fund the FBC and delivery of the project so, if local funding is required, this will have to be identified at a later stage.

5.5 Should the bid to DfT be successful the call on Combined Authority funding will be reduced by £1.2m which will be released to be allocated by the Authority to its priorities in line with the Local Assurance Framework.

6. Legal Implications

6.1 The Combined Authority will enter into a Grant Funding Agreement after confirmation as fit for purpose by the Combined Authority's Legal Services. The recommendations accord with CPCA's powers under Part 3 and 4 of the Cambridgeshire and Peterborough Combined Authority Order 2017 (SI 2017/251)

7. Appendices

7.1 Appendix 1 – Package Assessment Report – OBC Phase 1

7.2 Appendix 2 – Updated application form

8. Background Papers

8.1 24 March 2021 Fengate Phase 2 University Access Board Paper

University Access Study

Package Assessment Report

Document Control

Job Number: 5080924						
Document ref: University Access Study Package Assessment Report					Authorisation	
Rev	Purpose	Originated	Checked	Reviewed	Milestone	Date
1.0	First Draft	JB / SP	RMJ	JB	RMJ	1.11.21

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Appendix A: Concept Design Drawings for Package 1 and Package 2

Appendix B: Environmental Assessment Report

1. Introduction

1.1 Background

1.1.1 The purpose of the University Access Study is to identify transport improvements that can address existing and future issues of congestion and severance associated with accessing the Embankment Area, and the east of Peterborough City Centre.

1.1.2 The University Access Study focuses on the transport network which provides access to the Embankment Area, including Junction 5 of the A1139 Frank Perkins Parkway and the surrounding highway network including Bishop's Road, Vineyard Road and Boongate. It also considers the southern part of Fengate including the Boongate / Fengate Junction which also connects the Embankment Area to Fengate.

1.1.3 The routes included within the study area all connect the City Centre with the A1139 Frank Perkins Parkway via Junction 5. The routes are sensitive to local traffic conditions, and if one route is experiencing high levels of congestion and delay, vehicles will use the alternative route to Junction 5.

1.1.4 Figure 1.1 shows a plan of the study area.

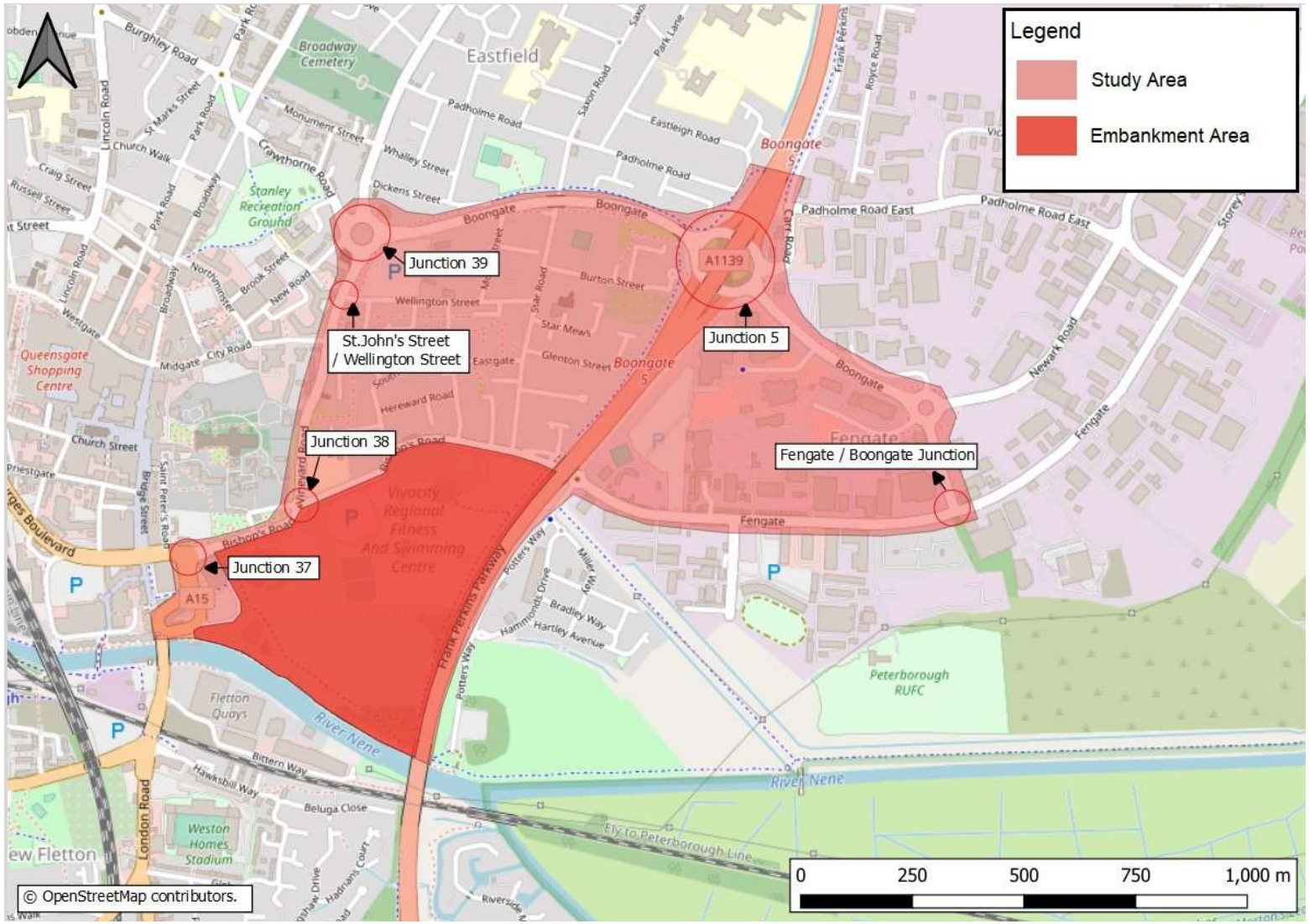


Figure 1.1: University Access Study Area

1.1.5 The City Centre is entering a new and exciting phase in its development, a phase that will deliver significant levels of growth, and the Embankment Area is identified as an opportunity area by Peterborough City Council, and includes proposals for a new University of Peterborough (referred to as ARU Peterborough from hereon), as well as supporting infrastructure such as the Fletton Quays Footbridge, a new pedestrian and cycle bridge connecting Fletton Quays to the Embankment Area.

1.1.6 Evidence of existing and future conditions at key junctions within the study area have demonstrated congestion and delay during the peak hours, and these are forecast to get worse with the proposed growth if no improvements are made.

1.1.7 The scheme has a number of primary and secondary objectives. The primary objectives are:

- Tackle congestion and reduce delay: Tackle congestion at key pinch points across the study area and reduce delay on routes to the Embankment Area
- Support Peterborough's Growth Agenda and facilitate the development of the Embankment Area including ARU Peterborough: Ensure the planned University development and other growth aspirations at the site can be accommodated within the highway network.

1.1.8 The secondary objectives include:

- Positively impact traffic conditions on the wider network: Positively impact the performance of local routes impacted by the traffic and congestion in and around the study area
- Improve Road Safety: Reduce personal injury accidents and improve personal security amongst all travellers
- Limit impact on the local environment and enhance biodiversity: Mitigate any adverse impact of a scheme and enhance biodiversity net gain within the study area.

1.2 Wider Context

1.2.1 There are a number of external influences which have an impact on this project, and the identification of a preferred option. These are discussed in turn below.

ARU Peterborough

1.2.2 ARU Peterborough will deliver an independent, campus-based university of 8,000 students and 1,250 staff located at the heart of the city by 2035. The new University will be fast-growing from 2022 to 2028 (with phased infrastructure)1:

- Phase 1: a first university building in Peterborough City Centre from September 2022 with capacity for around 4,000 students
- Phase 2: R&D, innovation, and incubator expansion. This will centre on Advanced Manufacturing and Materials Research for educational research and development.
- Phase 3: growth from 2025 up to around 6,500 students on roll by 2030. It comprises two further teaching focussed buildings, opening in 2025 and 2028, with an associated student union building and infrastructure works to open in 2025.

1.2.3 Phase 1 of the university received planning permission in November 2020 and will be built upon the existing Wirrina car park. A ground-breaking ceremony was held on the 8th of December 2020, with Phase 1 of ARU Peterborough is expected to open in September 2022. The Phase 2 Planning Application received permission in June 2021, and the Phase 3 application is expected in Autumn 2021. Development of the highway schemes is needed to provide the highway capacity for growth, which is already underway, within this area of the City Centre.

1 https://cambridgeshirepeterborough-ca.gov.uk/assets/Growth-Funds/2020.09.22-CSR-University-for-Peterborough-phase-3-final.pdf

Embankment Regeneration

1.2.4 The Embankment Area is predominantly open space facilitating social, recreational, leisure and cultural uses, but is supported by the inclusion of the Key Theatre, the Grade II listed Lido Outdoor Swimming Pool and the Regional Fitness and Swimming Centre as well as the Peterborough Athletics Track. In addition, there are several large surface car parks along Bishop's Road. However, the space is currently significantly underutilised, hence the need for regeneration.

1.2.5 An Embankment Masterplan is being prepared by Peterborough City Council and is expected to be completed by May 2022. This masterplan will inform the redevelopment that will take place on the Embankment as well as address the need for walking and cycling connection into and out of the site as well as within the site itself. This will include an improved frontage on the River Nene making it an attractive place for residents, worker, visitors to spend time.

1.2.6 Peterborough United Football Club have also expressed an interest in relocating the Peterborough United Football Stadium to the Embankment from their current location on London Road.

City Centre Transport Vision

1.2.7 To complement the City Centre development aspirations, a City Centre Transport Vision was prepared to guide future planning policy and provide an ambitious vision that can provide consistency to future development and growth within the City Centre. The vision embraces emerging technologies and a shift in travel behaviour. This includes the delivery of multi-functional transport hubs on the periphery of the city centre, providing the vast majority of City Centre car parking (private and public), and transition points for goods and deliveries destined for the City Centre.

1.3 Strategic Outline Business Case

1.3.1 The University Access Study Strategic Outline Business Case (SOBC) was submitted in December 2020 and made a strong strategic and economic case for improvements in the University Access study area.

1.3.2 Two packages of schemes were identified to add capacity to the highway network and address the existing problems of peak hour congestion and delay at key junctions within the study area. Additionally, they will help facilitate development at the Embankment Area and across the wider City Centre area by reducing severance.

1.3.3 The key difference between the two packages of schemes is that Package 1 provides a new northbound off-slip (Junction 4a) between A1139 Frank Perkins Parkway and Bishops Road. Package 2 includes the dualling of Boongate between Junction 5 (A1139 Frank Perkins Parkway / Boongate) and Junction 39 (Crawthorne Road / Eastfield Road / Boongate / St John's Street / New Road)

1.3.4 Package 1 included the following improvements in the SOBC:

- New northbound off-slip linking the A1139 Frank Perkins Parkway with Bishop's Road (Junction 4a)
- Junction 38 – 40m flare extension on Bishop's Road East
- Junction 5 – signalisation of the A1139 Frank Perkins Parkway southbound off-slip
- Boongate / Fengate Junction – 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East
- St John's Street / Wellington Street – creation of a roundabout.

1.3.5 Figure 1.2 shows a plan of the proposed improvements which form Package 1.

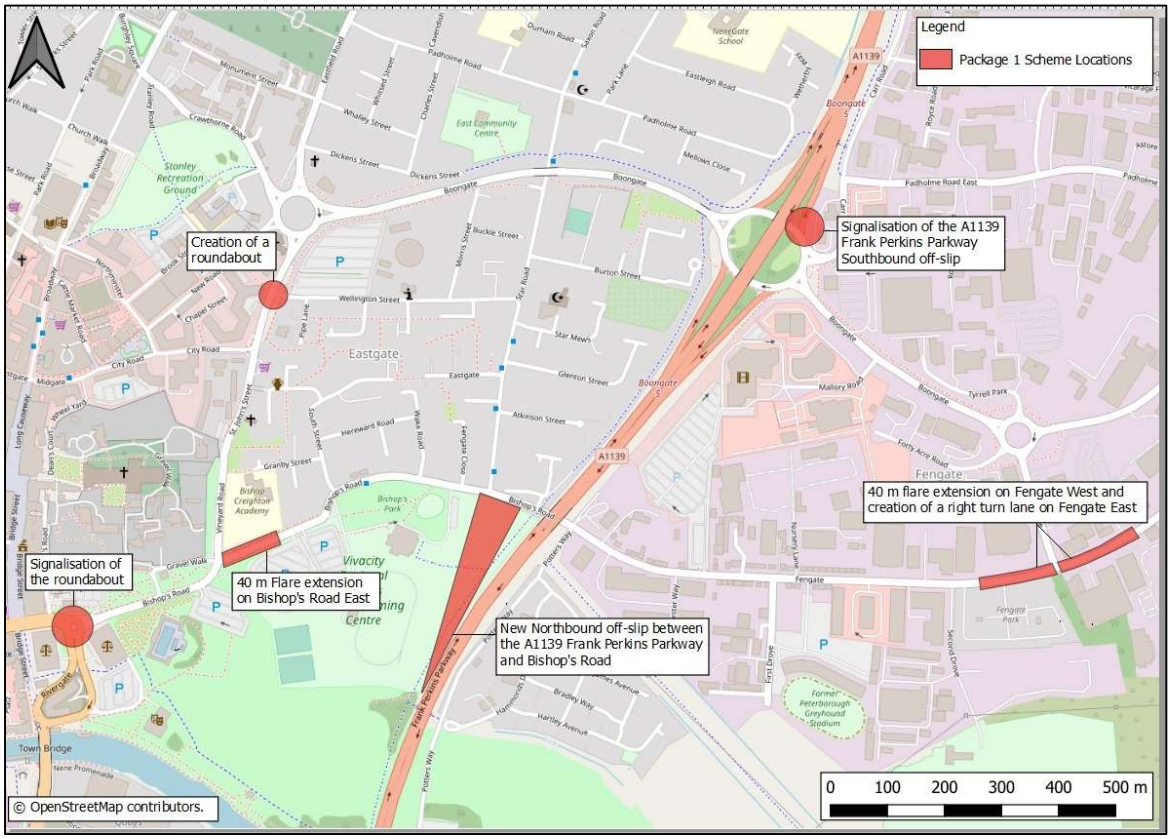


Figure 1.2: Package 1 Improvements

1.3.6 Package 2 contained the following improvements in the SOBC:

- Boongate West – dualling between Junction 5 and Junction 39
- Junction 5 – signalisation of A1139 Frank Perkins Parkway northbound and southbound off-slips, extension of the northbound off-slip left turn flare by approximately 20m, and provision of a left dedicated lane from the A1139 Frank Perkins Parkway northbound off-slip to Boongate West
- Junction 38 – 40m flare extension to Bishop's Road East
- Boongate / Fengate Junction – 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East
- St John's Street / Wellington Street – Creation of a roundabout.

1.3.7 Figure 1.3 shows a plan of the proposed improvements in Package 2.

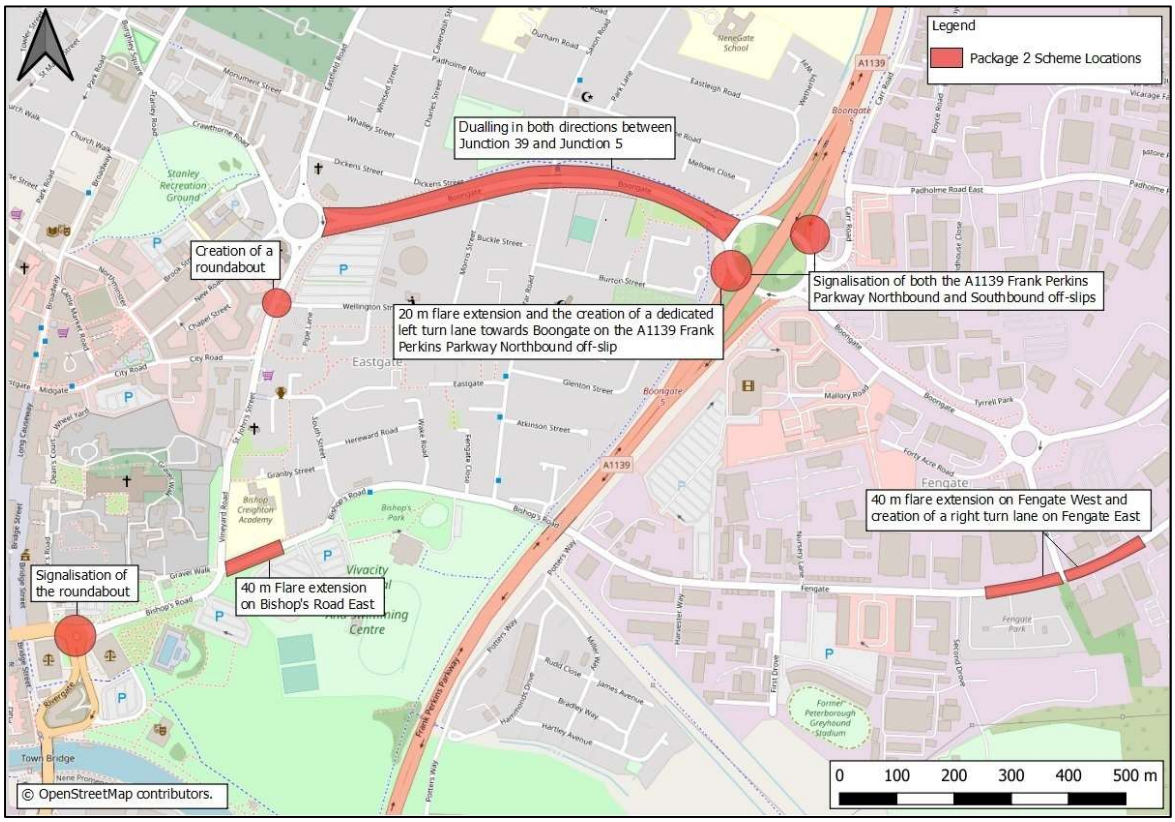


Figure 1.3: Package 2 Improvements

1.3.8 The SOBC demonstrated that both packages met the scheme objectives and reduced existing and future delay at the key junctions in the study area, therefore both Package 1 and Package 2 were considered within the Economic Assessment.

1.3.9 The Economic Assessment demonstrated that Package 1 achieved Very High Value for Money with a Benefit Cost Ratio (BCR) of 5.223. Package 2 achieved Medium Value for Money with a BCR of 1.574. The SOBC concluded that the Value for Money for both packages, especially Package 2, was expected to increase further as additional Economic Assessment and Design work is undertaken at subsequent stages of the Business Case. The Economic Assessment showed that Package 2 provided greater benefits than Package 1, however the cost estimate associated with it at SOBC reduced the BCR.

1.3.10 The SOBC also identified that the appropriateness (and value for money) of both packages are heavily dependent on influences beyond this study, such as the University Planning Application and the Embankment Masterplan, both of which are active workstreams, and assumptions would need to be updated and the impacts reviewed throughout the University Access Study.

1.3.11 A preferred Package could not be determined at the SOBC stage. Potential issues with Package 1 and the operational performance of the highway network directly adjacent to the proposed new northbound off-slip were identified in the Strategic Modelling.

1.3.12 In addition to this, there were changes to a number of the planning assumptions in the study area as the SOBC programme was drawing to a close. The changes included a significant increase in the number of students for the Phase 3 Planning Application University, and the possibility of the Peterborough United Football Ground relocating to the Embankment.

1.3.13 Due to the rapid pace of change of development in the study area, a more detailed assessment of the two packages has been undertaken to better understand the operational impact of the proposed Packages as well as the impact of the evolving strategy for the area, on the appropriateness of both packages. This document reports that detailed assessment of both packages, with the purpose of identifying a preferred option.

1.4 Pedestrian and Cycling Improvements

1.4.1 As part of the SOBC, a Non-Motorised User (MNU) audit was conducted across the study area to review the quality of the existing walking and cycling infrastructure, and to identify improvements to improve active travel provision and reduce severance for non-motorised journeys.

1.4.2 The audit identified the following potential improvements:

- Resurface all footpaths in the immediate vicinity of the Embankment Area, improving accessibility for all users. Resurfacing should reflect that on the most western section of Bishop's Road, where high quality upgrades to surface quality and shared use were implemented in 2018
- Implement controlled crossing points at the off / on slips of Junction 5 (southern side of circulatory) and along the Boongate approach / exit of Junction 39, increasing personal safety and reducing lengthy waiting times for active modes
- Improved lighting on routes which are set back from the roadside, as well as underpasses, improving the perceived safety of these areas.

1.4.3 Figure 1.4 shows the existing walking and cycling routes were identified for improvement within the SOBC. The routes provide key links to the wider walking and cycling infrastructure as well as the car parking sites that will be used by visitors to the Embankment Area.

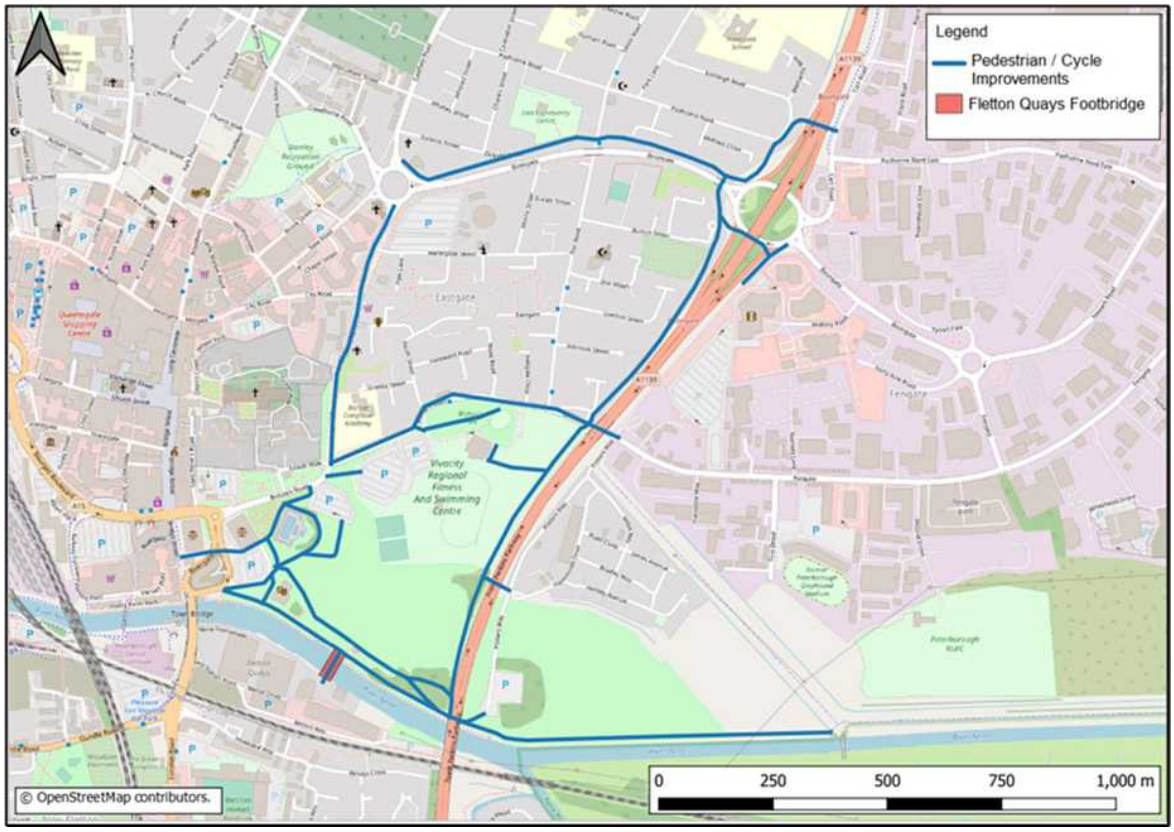


Figure 1.4: Existing Walking and Cycling Routes Identified for Improvement

1.4.4 Additional walking and cycling improvements have also been identified as part of the design development during and are discussed further in Chapter 3.

1.5 Package Assessment

1.5.1 The purpose of this Package Assessment Report is to summarise the further assessment undertaken on both packages, including policy, operational performance, design and construction, and environmental assessments. Public Consultation has also been undertaken with details provided in Chapter 7.

1.5.2 The report concludes by identifying the preferred Package to take forward to Preliminary Design and Outline Business Case.

1.6 Recent Developments

1.6.1 Since the University Access Study SOBC was submitted in December 2020, there have been two significant developments which will impact upon the identification of a preferred package.

1.6.2 The first, is the number of students expected to attend ARU Peterborough by Phase 3. At the time of writing the SOBC, it was assumed to be approximately 6,500 students. However, this has now increased to 12,500 students, and has a significant bearing on the number of trips destined to the Embankment area.

1.6.3 The second development is a change to the assumption in parking locations for the ARU Peterborough. In the SOBC, it was anticipated that there would be a 300-space multi-storey car park on the Embankment, with additional parking provided in a new car park on Potters Way. As part of the Phase 2 planning application, it was agreed that there would be minimal additional on-site parking at the University. The main car park for the Embankment Area, including ARU Peterborough, will be a new multi-storey at Wellington Street.

1.7 Document Structure

1.7.1 The remainder of the document is structured as follows:

- **Chapter 2:** sets out a comparison of how well Package 1 and Package 2 fits with local policy and external influences.
- **Chapter 3:** sets out the concept designs for both packages and provides a description on the key design and construction considerations associated with each scheme.
- **Chapter 4:** sets out the environmental assessment for Package 1 and Package 2.
- **Chapter 5:** compares the operational performance and impact of each package on the highway network in the study area.
- **Chapter 6:** provides an Economic Assessment of each package
- **Chapter 7:** details the public consultation undertaken and provides an assessment of responses received.
- **Chapter 8:** Summarises the Package Assessment Report.

2. Strategic Fit

2.1 Introduction

2.1.1 This chapter sets out a comparison of how well Package 1 and Package 2 fit with key local policy and aspirations for the surrounding area. The SOBC demonstrated how either the concept of a package of improvements at this location had a strong fit with national and regional policy, and so this assessment specifically focuses on how each of the packages aligns with local policy and plans.

2.2 Need for Change

2.2.1 The SOBC identified the factors that are driving the need for change. They come from local growth aspirations, particularly the establishment of ARU Peterborough.

Local Growth Aspirations

2.2.2 Peterborough is forecast to experience significant employment and population growth over the next few decades, reflecting a continuation of past trends. The Peterborough Local Plan (adopted July 2019) sets out the overall vision, priorities and objectives for Peterborough for the period up to 2036. The updated strategy identifies the required delivery of 19,440 new homes and 17,600 new jobs by 20362.

Embankment Area

2.2.3 The City Centre is entering a new and exciting phase in its development, a phase that will deliver significant levels of growth, and the Embankment Area is identified as an opportunity area by Peterborough City Council, and includes proposals for ARU Peterborough, as well as supporting infrastructure such as the Fletton Quays Footbridge, a new pedestrian and cycle bridge connecting Fletton Quays to the Embankment Area.

[2] https://www.peterborough.gov.uk/council/planning-and-development/planning-policies/local-development-plan

2.2.4 ARU Peterborough will deliver an independent, campus-based university. The new University will be fast-growing from 2022 to 2028 (with phased infrastructure)3:

- **Phase 1**: a first university building in Peterborough City Centre from September 2022 with capacity for around 4,000 students
- **Phase 2**: R&D, innovation and incubator expansion. This will centre on Advanced Manufacturing and Materials Research for educational research and development.
- **Phase 3:** growth from 2025 up to around 6,500 students on roll by 2030. It comprises two further teaching focussed buildings, opening in 2025 and 2028, with an associated student union building and infrastructure works to open in 2025.

2.2.5 Phase 1 of ARU Peterborough received planning permission in November 2020 and will be built upon the existing Wirrina car park. A ground-breaking ceremony was held on the 8th of December 2020, with Phase 1 expected to open in September 2022. In addition to this, work us already underway on the Phase 2 Planning Application which is due to be submitted in the next two months. Development of the highway schemes is needed to provide the highway capacity for growth, which is already underway, within this area of the City Centre.

2.2.6 ARU Peterborough has been identified as a key requirement for the north of the CPCA area to improve skills and the economy. In light of COVID-19, and the impact on the economy nationally as well as locally, improving the skills and employability of local people, will be a key component in strengthening the local economy, which will assist with the post COVID-19 economic recovery.

2.2.7 The Need for Change outlined above is the same for both Packages.

2.3 Strategic Fit Assessment

2.3.1 Both Packages have been assessed against relevant local policies and strategies to determine how well they fit with current and future aspirations. The policies and strategies that the packages have been assessed against include:

- Local Transport Plan for Cambridgeshire and Peterborough
- City Centre Transport Vision
- Towns Fund
- Embankment Masterplan
- Active Travel Commitments

3 https://cambridgeshirepeterborough-ca.gov.uk/assets/Growth-Funds/2020.09.22-CSR-University-for-Peterborough-phase-3-final.pdf

2.3.2 An analysis of how well each package meets the policy / strategy objectives is provided beneath and is summarised using a colour coded qualitative scoring system. The scores used are:

- Very Good (dark green) – directly delivers objectives
- Good (light green) – indirectly delivers objectives, or generally supports objectives
- Neutral (amber) – has no positive or negative impact
- Poor (light red) – does not deliver objectives or support objectives
- Very Poor (dark red) – has a significantly detrimental impact on objectives

2.4 Local Transport Plan for Cambridgeshire and Peterborough

2.4.1 In January 2020, the CPCA adopted a Local Transport Plan for Cambridgeshire and Peterborough which replaced the interim Local Transport Plan published in 2017. The plan describes how transport interventions can be used to address current and future challenges and opportunities for Cambridgeshire and Peterborough and sets out the policies and strategies needed to secure growth and ensure that planned large-scale development can take place in the region in a sustainable way.

2.4.2 The objectives of the Local Transport Plan form the basis against which schemes, initiatives and policies are assessed. The objectives of the CPCA Local Transport Plan are:

- **Housing** – support new housing and development to accommodate a growing population and workforce
- **Employment** – connect all new and existing communities so all residents can easily access jobs within 30 minutes by public transport
- **Business and Tourism** – Ensure all of our region's businesses and tourist attractions are connected sustainably to our main transport hubs, ports, and airports
- **Resilience** – build a transport network that is resilient and adaptive to human and environmental disruption, improving journey time reliability
- **Safety** – embed a safe system approach into all planning and transport operations to achieve Vision Zero (zero fatalities or serious injuries)
- **Accessibility** – promote social inclusion through the provision of a sustainable transport network that is affordable and accessible for all
- **Health and Well-being** – provide 'healthy streets' and high-quality public realm that puts people first and promotes active lifestyles
- **Air Quality** – ensure transport initiatives improve air quality across the region to exceed good practice standards

- **Environment** – deliver a transport network that protects and enhances our natural, historic, and built environments
- **Climate Change** – reduce emissions to as close to zero as possible to minimise the impact of transport and travel on climate change.

2.4.3 The Local Transport Plan states that a package of measures will be explored to create and enhance walking / cycling links to ARU Peterborough and improve highway access to the Parkway Network.

Package 1

2.4.4 Package 1, and specifically the provision of the slip road onto Bishops Road, delivers high volumes of traffic onto a low-capacity part of the network that has little scope for additional capacity to be added. This drawback has been exacerbated since the SOBC was produced by the significant increase in student numbers forecast for the later phases of the University. This does not support the objective of building a resilient transport network and improving journey time reliability.

2.4.5 The new northbound off-slip has the potential to impact the setting of Peterborough Cathedral, which is a high value heritage asset. There is also an impact on the biodiversity of the area where the northbound off-slip will be delivered (both of these impacts are discussed further in Chapter 4).

2.4.6 The proposed walking and cycling improvements, including the provision of an underpass under the slip road to maintain walking, and cycling connections, will support the Accessibility and Health and Well-being objectives through the provision of sustainable transport infrastructure and high-quality public realm.

Package 2

2.4.7 The dualling of Boongate provides a high quality and high-capacity link to the northeast transport hub at Wellington Street (which is expected to provide parking for the future growth of the Embankment Area), this supports the objective of building a resilient transport network and improving journey time reliability.

2.4.8 The dualling of Boongate would impact the biodiversity along Boongate, with the removal of trees and shrubs, this would not support the LTP Environment objective. However, replacement planting would form part of the scheme, along with a 20% net gain in biodiversity.

2.4.9 Similar to Package 1, the proposed walking and cycling improvements will support the Accessibility and Health and Well-being objectives. However, the potential walking and cycling improvements that could be delivered in conjunction with redevelopment of the area around Junction 39 would significantly enhance the provision of sustainable transport infrastructure and high-quality public realm in the study area.

Summary

Local Transport Plan	Policy / Strategy Score	Reasons
Package 1	Neutral	• High-volume of traffic on low-capacity road – not building a resilient transport network. • Potential impact to historic and natural environment (mitigation measures would be delivered alongside any scheme). • Walking and cycling improvements support health and well-being and accessibility objectives.
Package 2	Very Good	• Provision of high-quality, high-capacity link – supports a resilient transport network with improved journey time reliability. • Potential to impact natural environment (mitigation measures would be delivered alongside any scheme). • Walking and cycling improvements, especially at Junction 39, support health and well-being and accessibility objectives.

2.5 City Centre Transport Vision

2.5.1 To complement the City Centre development aspirations, a City Centre Transport Vision was prepared to guide future planning policy and provide an ambitious vision that will provide consistency to future development and growth within the City Centre. The vision embraces emerging technologies and a shift in travel behaviour to remove a significant proportion of vehicle trips from the heart of the City Centre. This includes the delivery of multi-functional transport hubs on the periphery of the City Centre, providing the vast majority of City Centre car parking (private and public), and transition points for goods and deliveries destined for the City Centre.

2.5.2 The City Centre Transport Vision also states that as each area of the city centre is planned and regenerated, it should:

- Create high quality Public Realm Corridors from the growth area into the City Centre
- Establish Transport Hubs to replace City Centre parking
- Remove highway capacity and reallocate space for urban realm improvements.

2.5.3 The City Centre Transport Vision is shown in Figure 2.2.

Figure 2.1: City Centre Transport Vision

Package 1

2.5.4 Package 1 delivers high volumes of traffic a low-capacity part of the network that has little scope for additional capacity to be added. This package could work in conjunction with a Transport Hub on the Embankment or in Fengate, but significant issues would still occur in the PM peak as access back onto the Parkway Network would still be via Boongate and Junction 5.

2.5.5 Recent developments in the Phase 2 planning application for ARU Peterborough also confirm that no significant parking will be provided on the embankment site.

Package 2

2.5.6 The dualling of Boongate provides a high quality and high-capacity link directly to the northeast transport hub at Wellington Street (which is expected to provide parking for the future growth of the Embankment Area) and significantly reduces the number of trips on the routes around the Embankment Area.

2.5.7 Package 2 has evolved to further support the City Centre Transport Vision through redeveloping the area around Junction 39, creating significant opportunities to improve walking, and cycling infrastructure, as well as public transport infrastructure.

2.5.8 Given the timing of development and pace of growth on the Embankment, delivery of Package 2 would likely form the first implementation of the City Centre Transport Vision and has real potential to provide the momentum to turn the vision into reality.

Summary

City Centre Transport Vision	Policy / Strategy Score	Reasons
Package 1	Very Poor	• Delivers high volumes of traffic onto low-capacity roads. • Does not provide access back onto the Parkway Network in the PM Peak. • University Parking now confirmed to be off-site.
Package 2	Very Good	• Upgrades Boongate to provide a direct high quality between the Parkway Network and a transport hub. • Redevelopment of the area around Junction 39 creates significant opportunities for improving active travel and public transport provision in the area. • Makes use of existing infrastructure.

2.6 Peterborough Towns Fund

2.6.1 In October 2020, Peterborough City Council was awarded £22.9m from the Government's Towns Fund to support a range of projects in areas such as urban regeneration, planning, land use, connectivity, skills, and enterprise infrastructure to support the planned future growth of Peterborough.

2.6.2 One of the drivers behind the bid was for Peterborough to become a 'walkable' city, making it easier to travel on foot and by bicycle.

2.6.3 A key component of the Towns Fund is 'Riverside Development and Connections' which includes creating a masterplan for the Embankment and designing and building an additional bridge across the river to improve pedestrian and cycle connectivity between the north and south of the city. The Towns Fund will develop the Embankment Area to create a green and accessible place for residents to relax and enjoy leisure and entertainment

Package 1

2.6.4 The provision of the northbound off-slip from A1139 Frank Perkins Parkway has the potential to impact on the built environment of the Embankment Area, with large scale highway infrastructure in an elevated position with a high volume of vehicles travelling down the slip-road and along Bishop's Road.

2.6.5 The proposed walking and cycling improvements will help to achieve the 'walkable city' ambition.

Package 2

2.6.6 Boongate Dualling will have no impact on the proposals for the Embankment Area and will indirectly support the proposals by removing traffic from adjacent roads.

2.6.7 The 'walkable city' ambition will be supported through improvements to walking and cycling infrastructure.

Summary

Towns Fund	Policy / Strategy Score	Reasons
Package 1	Good	• Provision of northbound off-slip may impact on proposals for Embankment. • Walking and cycling connections will meet the 'walkable' city ambition.
Package 2	Very Good	• Boongate Dualling has no impact on Embankment Area proposals and removes traffic from adjacent roads. • Walking and cycling connections will meet the 'walkable' city ambition.

2.7 Embankment Masterplan

2.7.1 To support the redevelopment of the Embankment Area, an Embankment Masterplan is being prepared by Peterborough City Council and is expected to be completed by May 2022. This masterplan will inform the redevelopment that will take place on the Embankment as well as address the need for walking and cycling connections into and out of the site as well as within the site itself. This will include an improved frontage on the River Nene making it an attractive place for residents, worker, visitors to spend time.

Package 1

2.7.2 The delivery of a new northbound off-slip would provide a direct link between the Parkway Network and the Embankment Area. However due to recent planning decisions to minimise on-site parking, vehicles will be required to use low-capacity routes to reach wider City Centre car parking.

2.7.3 The provision of the new off-slip will also reduce the land available for redevelopment at the Embankment Area, and has the potential to impact the type of development that could take place adjacent to the off-slip.

2.7.4 Improvements to walking and cycling connections to the Embankment Area will be delivered on St John's Street, Vineyard Street and Bishop's Road.

Package 2

2.7.5 Package 2 does not impact on the Embankment Area at all in terms of land availability. There would be no impact on type or amount of development that could take place.

2.7.6 The dualling of Boongate will provide a high capacity, high quality route with direct access to car parking facilities at Wellington Street. Walking and cycling improvements to the Embankment Area will be delivered on St John's Street, Vineyard Street and Bishop's Road. In addition, the redevelopment of the area around Junction 39 will enable significant improvements for pedestrians and cyclists at this location.

Summary

Embankment Masterplan	Policy / Strategy Score	Reasons
Package 1	Poor	• Reduces land available for redevelopment. • Improvements to walking and cycling connections.
Package 2	Very Good	• No impact on land available for redevelopment. • Improvements walking and cycling connections to Embankment Area, especially at Junction 39.

2.8 Active Travel

2.8.1 The provision of walking and cycling infrastructure is becoming increasingly critical to all transport schemes, especially with the Government's recent Gear Change strategy and PCC's adoption of LTN 1/20 guidance.

Package 1

2.8.2 Walking and cycling improvements have been identified for Package 1. The improvements will assist in encouraging active travel and provide key connections between the Wellington Street Transport Hub and the Embankment Area.

Package 2

2.8.3 The walking and cycling improvements for Package 2 are almost identical to those in Package 1. However, the potential re-development of the area Junction 39 in Package 2 provides the opportunity to create a significant improvement to walking and cycling in the area. Crossing this large roundabout is currently very difficult for pedestrians and cyclists and serves as a barrier to active travel routes from the north/north-east of the city to the Embankment Area.

Summary

Active Travel	Policy / Strategy Score	Reasons
Package 1	Good	• Walking and cycling improvements will encourage active travel.
Package 2	Very Good	• Walking and cycling improvements identified will encourage active travel. • Re-development of area around Junction 39 creates significant opportunities to improve walking and cycling infrastructure.

2.9 Summary of Strategic Fit Assessment

2.9.1 Table 2.1 provide a summary of the Strategic Fit assessment.

Table 2.1: Strategic Fit Assessment Summary

Policy Area	Package 1	Package 2
Local Transport Plan		
City Centre Transport Vision		
Peterborough Towns Fund		
Embankment Masterplan		
Active Travel		

2.9.2 Table 2.1 demonstrates that Package 2 has a very strong strategic fit with the local policy and growth aspirations.

2.9.3 The dualling of Boongate, provided as part of Package 2, provides a high-capacity and high-quality link from the Parkway Network to the transport hub at Wellington Street (which is expected to provide parking for the future growth of the Embankment Area) and significantly reduces the number of trips on the routes around the Embankment Area.

2.9.4 Given the timing of development and pace of growth on the Embankment, delivery of Package 2 would likely form the first implementation of the City Centre Transport Vision.

2.9.5 Package 1 delivers high volumes of traffic onto a low-capacity part of the network with limited scope for improvement (specifically Bishops Road in Fengate), and this issue has been exacerbated since the SOBC by recent planning assumptions that significantly increase the number of trips associated with the latter phases of ARU Peterborough.

2.9.6 Package 1 could work in conjunction with a Transport Hub on the Embankment or in Fengate, but significant issues would remain in the PM peak as access back onto the Parkway Network would still be via Boongate and Junction 5. In addition, the northbound off-slip could impact redevelopment proposals for the Embankment Area and reduce the amount of land available for development.

2.9.7 Both Package 1 and Package 2 meet walking and cycling objectives within wider policy documents, with improvements identified to improve connectivity to the Embankment Area and encourage walking and cycling trips on as part of a healthy and active lifestyle. Package 2 includes additional proposals for the redevelopment of the area around Junction 39, creating significant opportunities to improve walking and cycling infrastructure, as well as public transport infrastructure in a much needed area of the city.

3. Design and Construction

3.1 Introduction

3.1.1 This chapter sets out the concept designs for both packages and provides a description on the key design and construction considerations associated with each of the schemes.

3.1.2 Package 1 includes the creation of a new northbound off-slip (Junction 4a) from the A1139 Frank Perkins Parkway and Package 2 includes the dualling of Boongate between Junction 5 and Junction 39. Beyond these improvements, both packages contain the same supporting schemes, which are detailed beneath.

3.1.3 It should be noted that the schemes presented beneath have been developed in response to existing issues and to help facilitate future growth. However, there may be a need to re-evaluate and modify improvements in the final package if there is a significant change to assumptions about future growth and development within the study area.

3.2 Package Overview

3.2.1 Each of the packages are introduced in the SOBC and OAR, however some have been updated in recent design work. Each of the packages are outlined beneath.

Package 1

3.2.2 Package 1 consists of the following schemes:

- New northbound off-slip linking the A1139 Frank Perkins Parkway with Bishop's Road (Junction 4a)
- Junction 38 – 40m flare extension on Bishop's Road East
- Junction 5 – signalisation of the A1139 Frank Perkins Parkway southbound off-slip
- Boongate / Fengate Junction – 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East
- St John's Street / Wellington Street – creation of a roundabout.
- Pedestrian and Cycle Improvements – improvements on routes connecting to the Embankment including pedestrian and public realm improvements to St John's Street / Vineyard Road and pedestrian and cycle improvements along Bishop's Road. Also, provision of wider connectivity to Embankment Area, such as Stanground Boardwalk and Charters Pontoon.

3.2.3 Figure 3.1 shows a plan of the proposed improvements in Package 1.

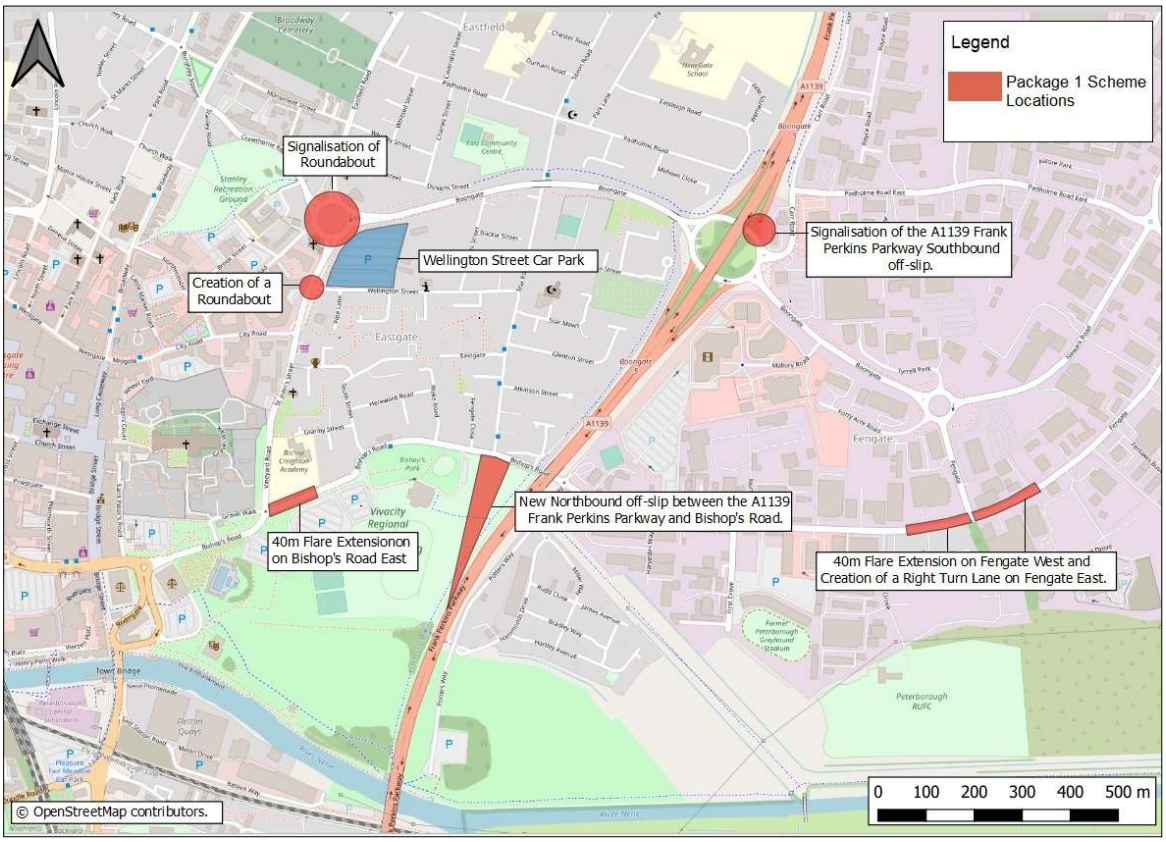


Figure 3.1: Package 1 Improvements

Package 2

3.2.4 Package 2 consists of the following schemes:

- Dualling of Boongate between Junction 5 and Junction 39
- Junction 38 – 40m flare extension on Bishop's Road East
- Junction 5 – signalisation of the A1139 Frank Perkins Parkway northbound and southbound off-slip
- Boongate / Fengate Junction – 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East
- St John's Street / Wellington Street – creation of a roundabout.
- Pedestrian and Cycle Improvements – improvements on routes connecting to the Embankment including pedestrian and public realm improvements to St John's Street / Vineyard Road and pedestrian and cycle improvements along Bishop's Road. Also, provision of wider connectivity to Embankment Area, such as Stanground Boardwalk and Charters Pontoon. Significant walking and cycling improvements to Junction 39 through public realm and provision of crossings.

3.2.5 Figure 3.2 shows a plan of the proposed improvements in Package 2.

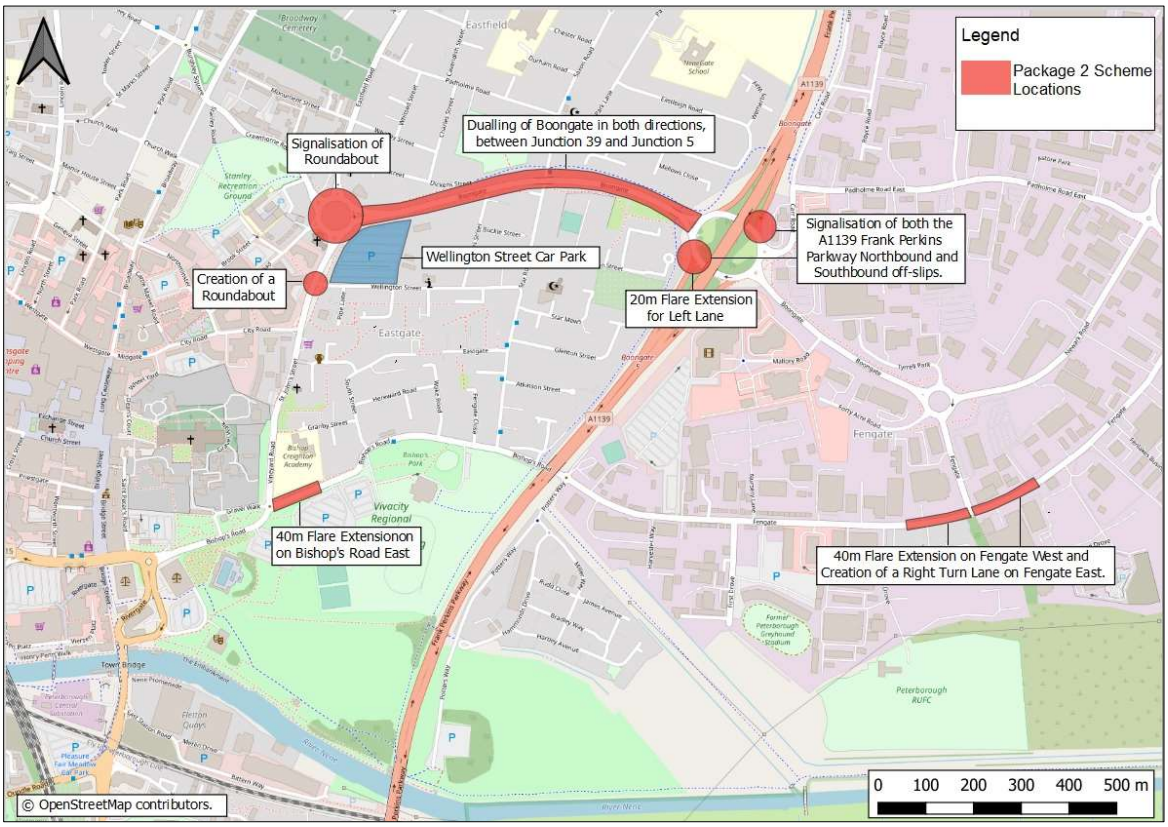


Figure 3.2: Package 2 Improvements

3.2.6 The A1139 Northbound off-slip (Junction 4a – Package 1) and the Boongate Dualling (Package 2) are discussed in greater detail beneath, followed by each of the supporting schemes.

3.3 Design Comments by Scheme

New Northbound Off-Slip (Junction 4a) – (Package 1)

3.3.1 Figure 3.3 shows the concept design for the proposed new northbound off-slip (Junction 4a) from the A1139 Frank Perkins Parkway to Bishops Road. The full concept design drawing is provided in Appendix A.

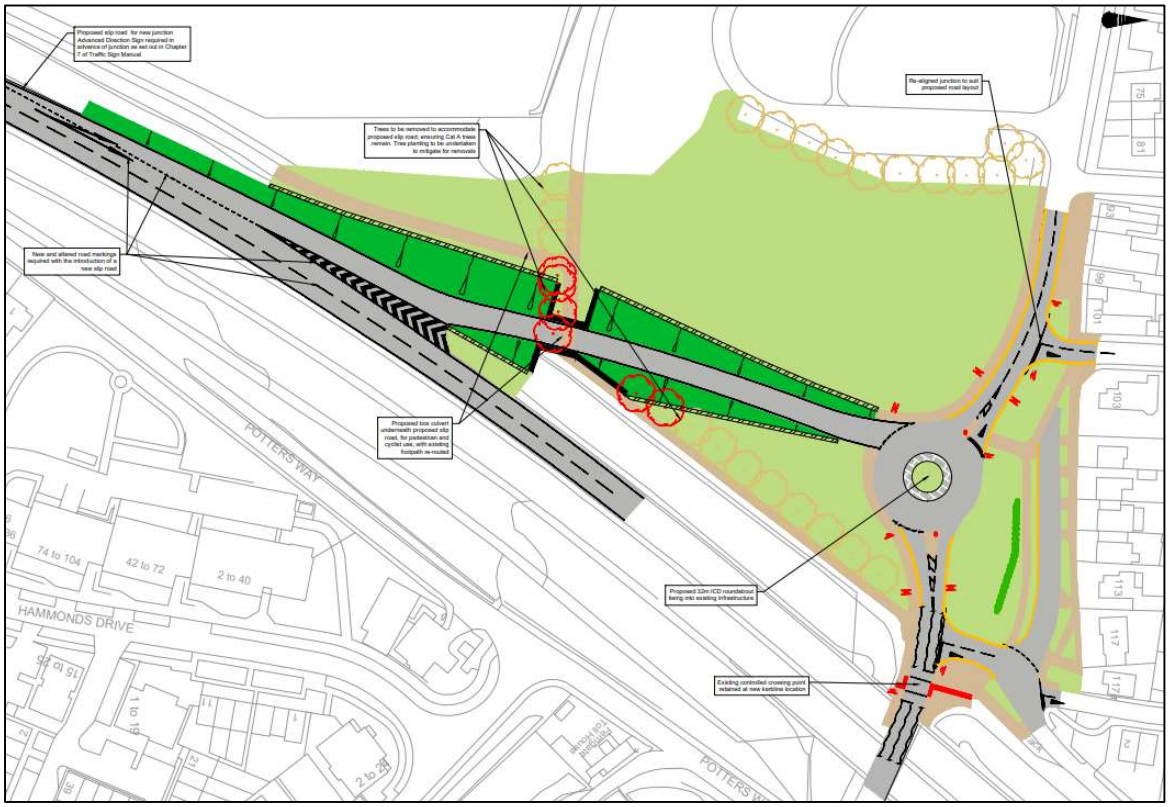


Figure 3.3: Concept Design of New Northbound Off-Slip

3.3.2 The improvement comprises a two lane off-slip from the A1139 Frank Perkins Parkway to Bishop's Road to form a new Junction 4a. Initial design work undertaken in support of the OAR and SOBC confirmed that it was not possible to provide an opposing southbound on-slip due to the existing constraints (including housing) to the east of Frank Perkins Parkway.

3.3.3 A roundabout will connect the new slip road into the existing highway network at Bishop's Road. A new underpass will be included beneath the new slip road to ensure that walking and cycling connections between the City Centre and Fengate are maintained.

3.3.4 The land required to construct the new off-slip is within ownership of the Council and no third-party land is required. There are services including a BT chamber, Virgin media cables and a UKPN high and low voltage cables in the footway along Bishop's Road. Further investigation into the services would be undertaken as part of the preliminary design.

3.3.5 The University Access Study SOBC highlighted the community importance of the ten Corsican Elms running parallel to the A1139 Frank Perkins Parkway. Initially it was thought the provision of a slip road would require all ten trees to be removed. However, the concept design has tried to minimise the impact on the Corsican Elms through realignment of the road, with only two trees requiring removal. Four other trees (of different species) will also need to be removed on the southern side of the recreation area.

3.3.6 The provision of the new off-slip at this location will impact the Bishop's Road recreation area, reducing its size.

3.3.7 Construction of the new northbound off-slip is not considered to be difficult, as much of the slip-road can be built off-line with night-time or weekend closures used for tie-ins at either end.

Boongate Dualling (Junction 5 to Junction 39) – (Package 2)

3.3.8 Figure 3.4 shows the concept design for the proposed dualling of Boongate between Junction 5 and Junction 39. The full concept design is provided in Appendix A.

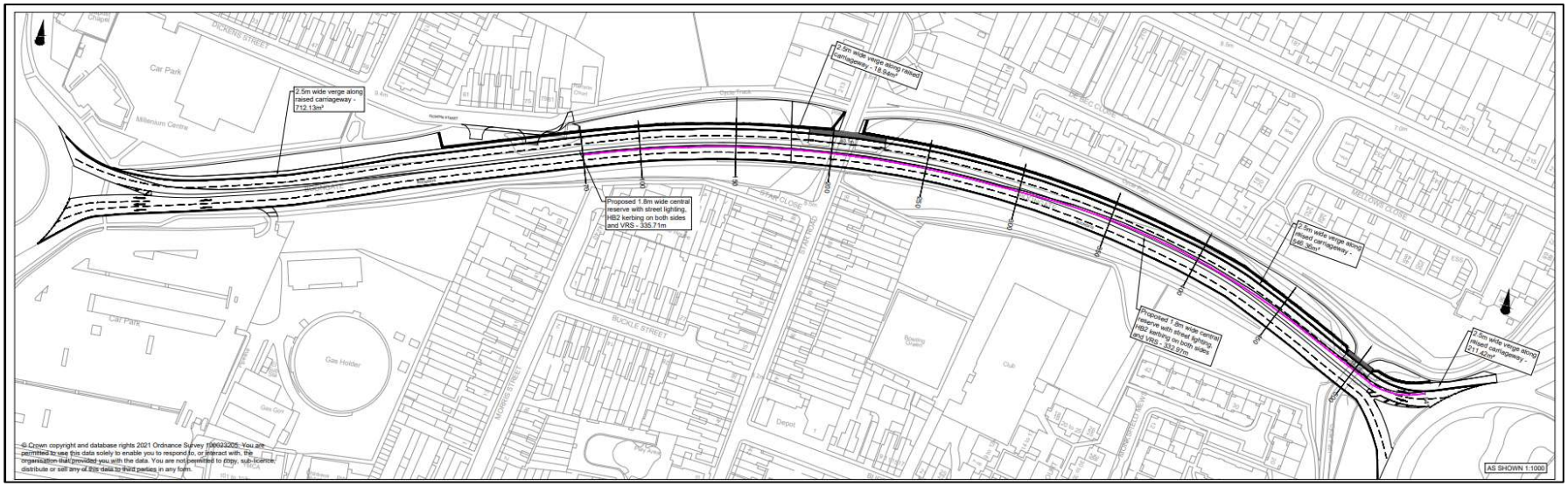


Figure 3.4: Concept Design of Boongate Dualling

3.3.9 The improvement upgrades the existing single carriageway to a dual carriageway between Junction 5 and Junction 39 by widening to the north of the existing road. The Star Road Bridge and the Mellows Close Subway will be widened to accommodate the dualling as part of the scheme.

3.3.10 Mellows Road Subway is a reinforced concrete box structure carrying Boongate over a footway and cycleway to the west of Junction 5. The existing bridge will be widened by approximately 7.8m to the north by removing the existing north edge beam and parapet, then stitching in reinforcement to allow a new reinforced concrete extension to be added

3.3.11 Star Road Bridge comprises a bridge deck made of prestressed beams with in-situ reinforced concrete infill, resting on reinforced concrete abutments with brick cladding. The structure currently carries Boongate as a single two-lane carriageway over Star Road. The existing bridge will be widened by approximately 9.0m to the north by constructing new reinforced concrete abutments on piled foundations adjacent to the existing structure, then demolishing the parapet and existing edge beam to allow additional prestressed beams to be placed over the new abutments and new parapets to be constructed.

3.3.12 A topographical survey was undertaken to inform the concept design of the Star Road Bridge widening. Originally it was thought that a retaining wall would be required along the length of much of the new carriageway, however this has now been limited to the vicinity of the Star Road Bridge based on the survey results.

3.3.13 The land required to construct the dualling is within the highway boundary or Community Related Asset (CRA) land which is controlled by the Council. At this stage, no third-party land is required. There are a number of services within the vicinity of the proposed scheme that will need further investigation at the preliminary design stage, however it is not anticipated that any of these pose a significant risk to the delivery of the scheme.

3.3.14 The dualling of Boongate will bring the edge of the carriageway to within 3.5m of the edge of Dickens Street and will require the turning head on Dickens Street to be relocated. Several parking spaces on Dickens Street may be lost to this relocation, as well as a portion of the tree and shrub belt, requiring complimentary landscaping works to offset the impact

3.3.15 Construction of this scheme can predominantly be undertaken off-line, with no disruption to the existing network. However, Star Road may need closing for a duration whilst the bridge widening works are undertaken. Similarly Mellows Close underpass will also require closure for a potentially lengthy duration. The street lighting will need to be moved to the central reserve once the road is widened, which will require a wider central reservation and therefore more land.

3.3.16 Consideration will need to be given on how best to minimise disruption to a key route into the City Centre from the Parkway Network, and what impacts and constraints are associated with night-time working in an urban area close to residential areas.

Junction 38 Improvements

3.3.17 Figure 3.5 details the concept design for the proposed flare extension on the Bishop's Road (East) approach to Junction 38. The full concept design is provided in Appendix A.

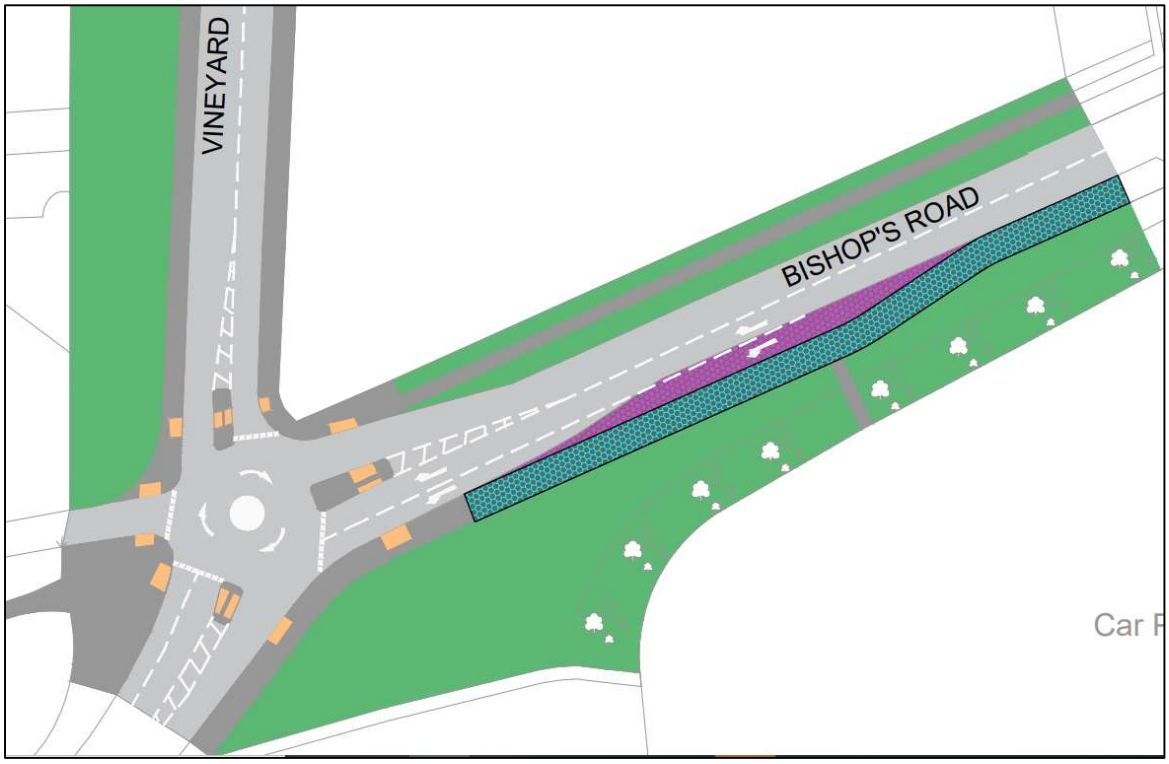


Figure 3.5: Concept Design of Junction 38 Improvements

3.3.18 The Junction 38 improvements consist of a 40m flare extension on Bishop's Road East. The flare will allow for additional stacking capacity at the roundabout for vehicles wishing to turn left into Bishop's Road West. The scheme will also include a re-aligned shared footpath / cycleway along Bishop's Road.

3.3.19 The land required for this scheme is either within the Highway Boundary or CRA land, and no third-party land is required.

3.3.20 There are some services within the vicinity of the scheme that will need to be considered as the design progresses, however they are not anticipated to impact significantly upon the scheme delivery.

3.3.21 Construction of the scheme is considered to be straightforward. Traffic management will be required, and due to its proximity to the City Centre, it is likely to 3-way temporary traffic signals during off-peak hours. Resurfacing is likely to require night-time closure.

3.3.22 Please note that due to its proximity to ARU Peterborough, Junction 38 is very sensitive to proposals in the University Planning Applications and the scheme may need to be revised as proposals for ARU Peterborough evolve.

St John's Street / Wellington Street Junction Improvements

3.3.23 Figure 3.6 shows the concept design for the proposed roundabout at the St John's Street / Wellington Street Junction. The full concept design is provided in Appendix A.

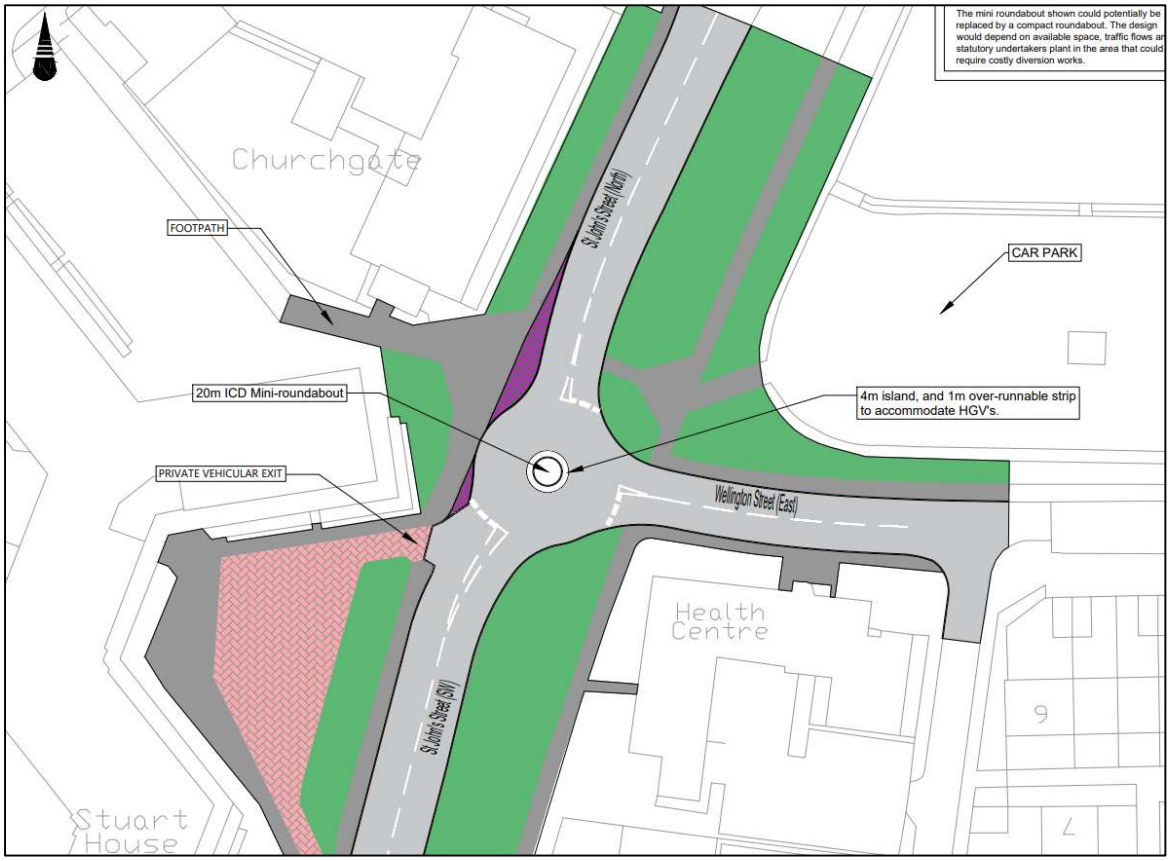


Figure 3.6: Concept Design of St John's Street / Wellington Street Junction Improvements

3.3.24 The proposed improvement at this location consists of converting the St John's Street / Wellington Street Junction to a roundabout

3.3.25 The proposed improvement can fit within the space available, however the roundabout size and approach deflections may not be optimal.

3.3.26 The provision of a roundabout at this location would incorporate crossing facilities for pedestrians and cyclists, the details of these will be carefully considered during Preliminary Design.

3.3.27 One particular issue that will need to be carefully designed is the private vehicular exit from Stuart House which is to southwest of the junction. A right turn ban from this exit may be required. In addition, there are some services within the vicinity of the scheme that will need to be considered as the design progresses, however they are not anticipated to significantly impact upon the scheme delivery.

3.3.28 The operational modelling has shown that the scheme does offer benefit, but some residual queuing remains on the St John's Street northbound approach. Further work will be required as part of the preliminary design to determine whether this can be mitigated given the site constraints. However, this junction is included within the proposals to reconfigure the Junction 39 area (explained beneath) and will be considered as part of that.

3.3.29 Construction of the junction is considered to be straight-forward, however traffic disruption is likely as this route is a key north-south route in the City Centre. Construction will likely require off-peak temporary traffic signals and night-time closures.

Boongate / Fengate Junction Improvements

3.3.30 Figure 3.7 shows the concept design for the proposed improvements to the Boongate / Fengate Junction. The full concept design is provided in Appendix A.

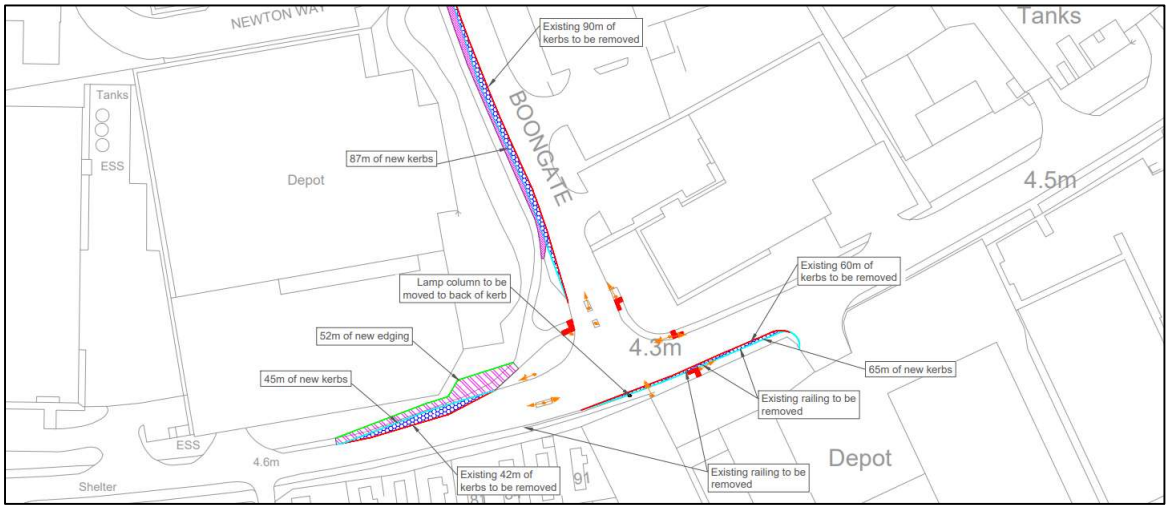


Figure 3.7: Concept Design of Boongate / Fengate Junction Improvements

3.3.31 The improvements to the junction consist of a 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East. In the SOBC, it was stated that a parcel of private land would be required to enable the dedicated right turn lane to be implemented. However further work on the design of this junction has enabled the improvement to be built within the existing highway boundary, removing the need for additional land take on this side of the junction.

3.3.32 On the Fengate West approach, the highway boundary only extends to the rear edge of the footway to the north and third-party land may therefore be required to accommodate both the flare extension and the footway. This will be confirmed at the next stage of the design process.

3.3.33 Services are also present within the vicinity of the junction. It is not anticipated that these will have a significant impact on scheme delivery. Further assessments will be undertaken during preliminary design.

3.3.34 Construction of the scheme is anticipated to be relatively straight-forward, however there will be localised disruption to traffic at this key junction within Fengate. Evening and weekend closures may be required to construct the scheme, alongside off-peak temporary traffic signals.

Junction 5 Improvements

3.3.35 Figure 3.8 shows the signalisation of Junction 5 (as in Package 2). The full concept design is provided in Appendix A. Package 1 only includes the A1139 Frank Perkins Parkway southbound off-slip to be signalised. Package 2 includes the signalisation of both the northbound and southbound off-slips.

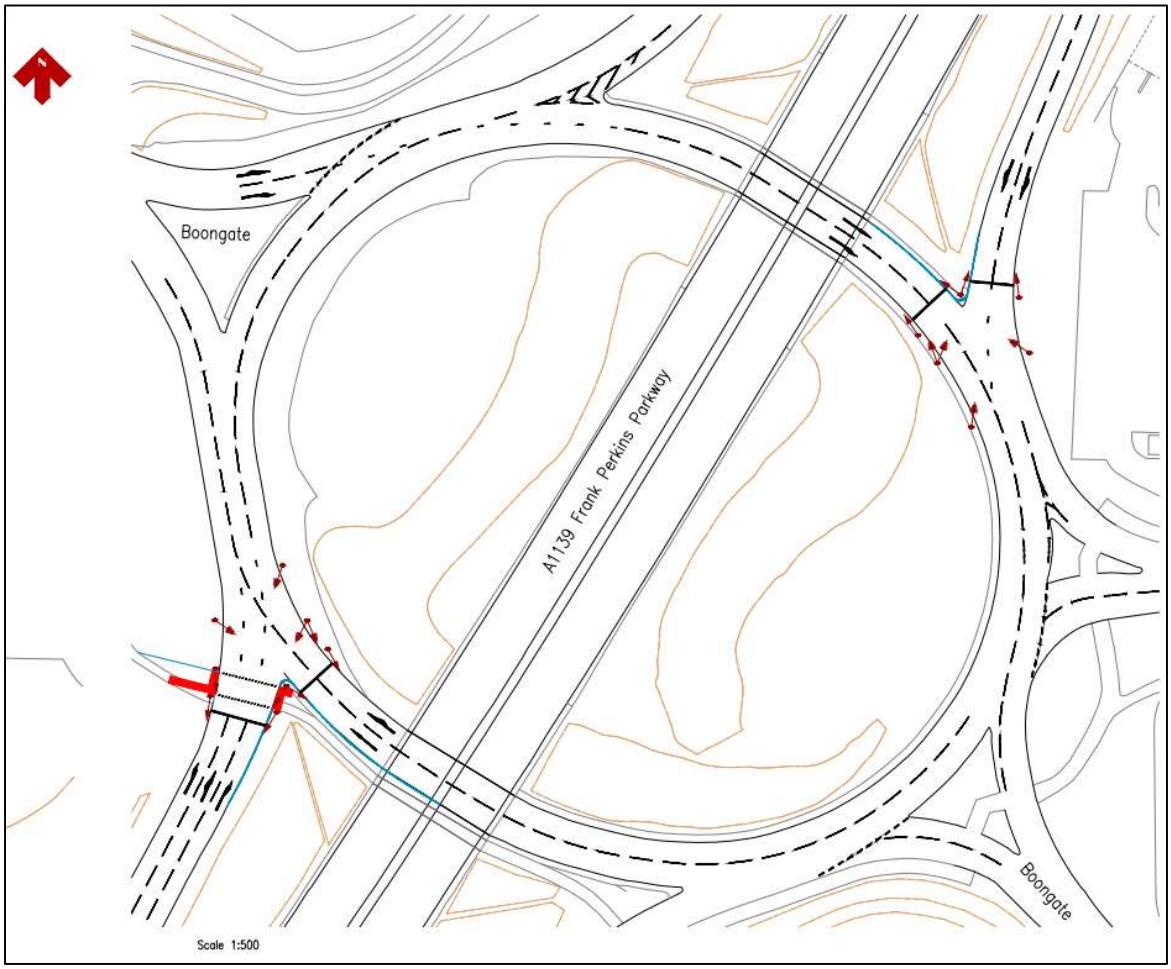


Figure 3.8: Concept Design of Junction 5 Signalisation (As in Package 2)

3.3.36 Further design work has updated proposals for the signalisation of the A1139 northbound off-slip approach to Junction 5 to remove the left dedicated lane that was included in the scheme at SOBC, and instead incorporate the left turn lane into the signalisation at the main junction. The revised three lane approach has been adopted over the left dedicated lane as further design work identified that significant and costly groundworks would be required to support the left dedicated lane, and that it would have a significant impact on tree and vegetation loss.

3.3.37 The phasing of signals has been designed to avoid queues forming onto the A1139 Frank Perkins Parkway, and the signals at the northbound off-slip will provide a formal crossing for pedestrians and cyclists (Package 2 only).

3.3.38 All the land required to deliver these improvements is within the highway boundary. There are known to be services within vicinity of junction, however it is not currently anticipated that these will have a significant impact on scheme delivery.

3.3.39 Delivery of the proposed improvement is considered to be relatively straightforward in construction terms, with weekend slip-road closures likely to be required.

Junction 39 Improvements (Minor Upgrade)

3.3.40 Both Package 1 and 2 include signalisation of Junction 39. This improvement was not included as part of the strategic assessment in the SOBC but has been identified by the operational modelling assessment (discussed later in Chapter 5).

3.3.41 Figure 3.9 shows the concept plan for the proposed junction improvement. The full concept design is provided in Appendix A.

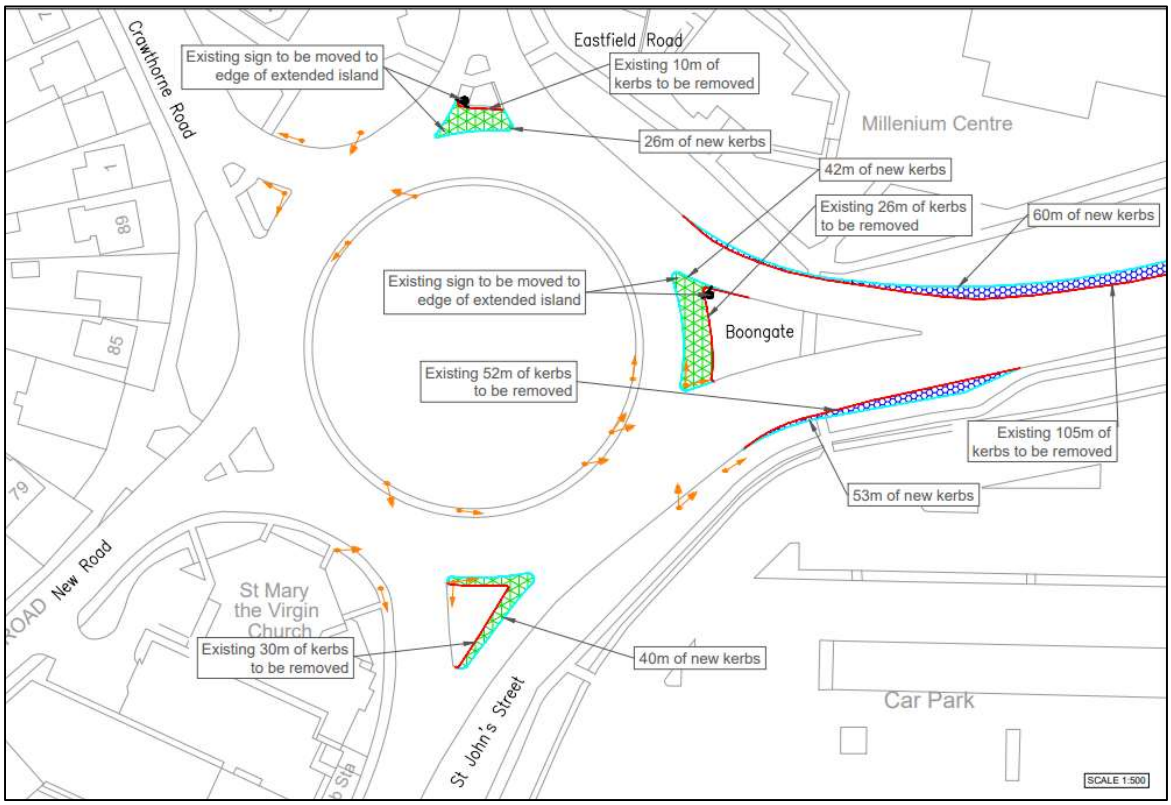


Figure 3.9: Concept Design of Junction 39 Signalisation

3.3.42 Although the signalisation of Junction 39 provides benefits to the operation of junction in both packages, there is still uncertainty on the appropriate junction at St John's Street / Wellington Street to accommodate vehicles exiting the car park. In addition, there is a significant severance caused by the junction for pedestrians and cyclists. Controlled crossings would be provided at the stop lines on approaches, however the provision of controlled crossings on the exits of the junction significantly reduce capacity and reduce the operational efficiency of the junction.

Junction 39 Improvements (Major Upgrade)

3.3.43 In addition to the minor upgrade described above, a much more significant overhaul of the Junction 39 area has been emerged from the current phase of design work. A more significant response to the challenges at this location is needed due to the active travel limitations associated with the existing playout of Junction 39 (which is not significantly altered by the minor upgrade proposals), the operational issues associated with the St John's Street / Wellington Street Roundabout and the increasing opportunity to support the evolving City Centre Transport Vision

3.3.44 Concept proposals for a major of upgrade for Junction 39 have now been developed and the proposal is shown is Figure 3.10 beneath. The intention is to include this proposal as part of Package 2 (replacing the minor upgrade of Junction 39) in the next stage of work (Preliminary Design and OBC).

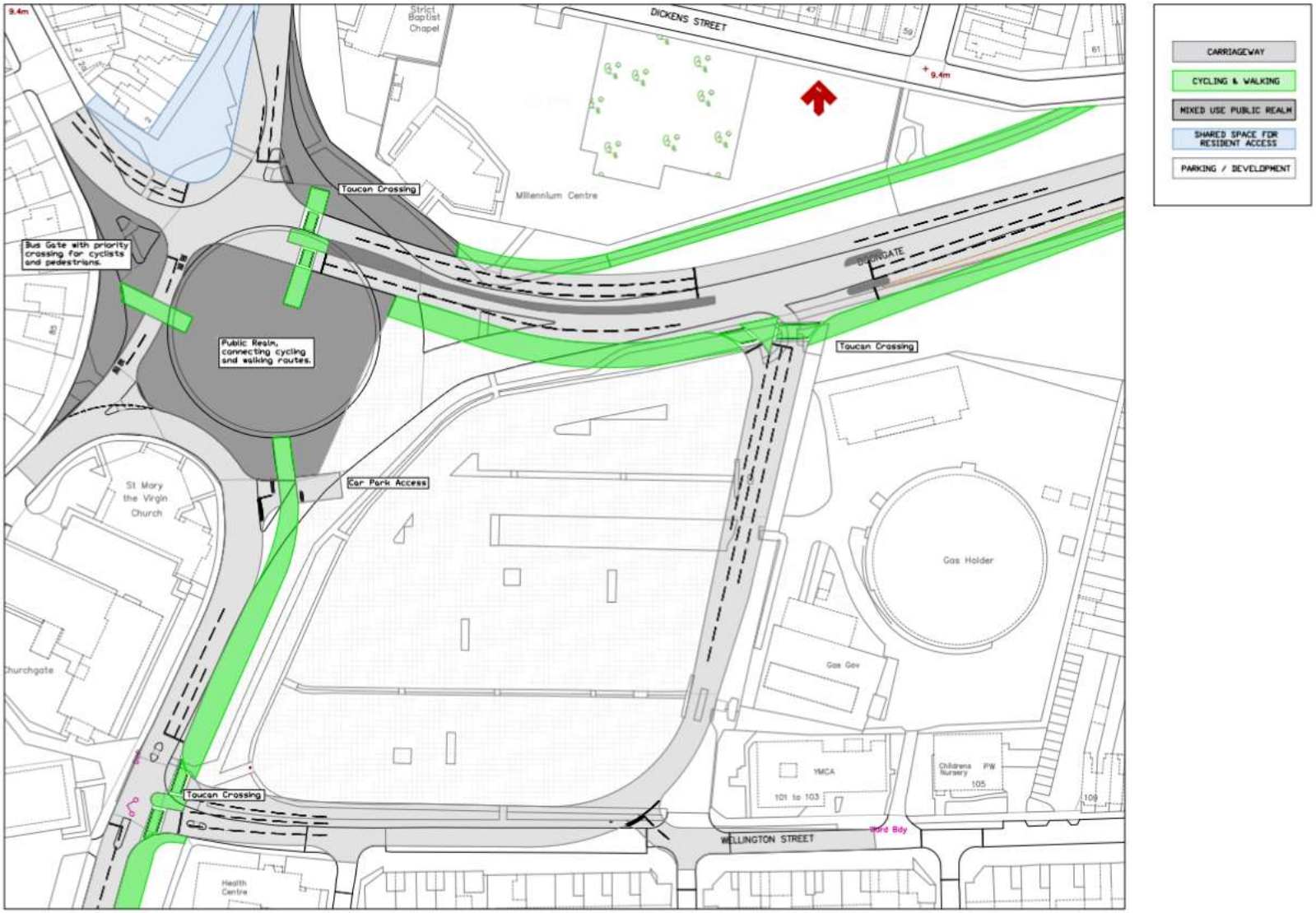


Figure 3.10: Junction 39 Major Upgrade Proposed for Package 2

3.3.45 The proposal for Junction 39 will dramatically change the form of junction and how traffic travels through it. It will accommodate vehicles wishing to enter and exit the car park, reducing the pressure on the St John's Street / Wellington Street junction, and significantly improve provision for pedestrians and cyclists.

3.3.46 Further assessment and design will be required at the next stage to optimise the layout and performance of the junction for all users.

Active Travel Improvements

3.3.47 The University Access Study also includes a range of pedestrian and cycling improvements across the study area. The improvements focus on improving the connections between the Wellington Street Car Park and the Embankment Area as well as improving connectivity to the Embankment from the wider area.

3.3.48 The walking and cycling improvements are discussed in turn below and detailed in Figure 3.11 (in red). Note that the improvements shown in blue are complimentary improvements that are being delivered through other workstreams and are beyond the scope of this project.

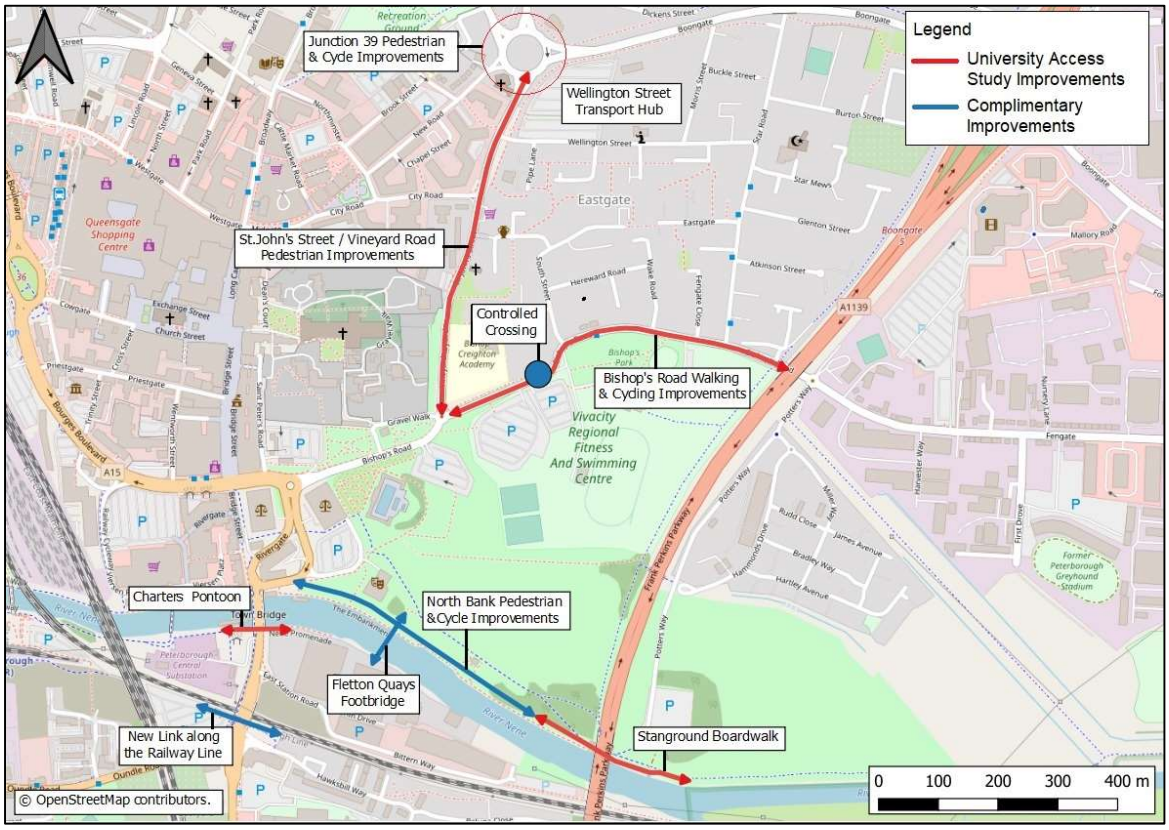


Figure 3.11: Walking and Cycling Improvements in Study Area

3.3.49 Pedestrian improvements are included to the eastern side of St John's Road / Vineyard Road as the key walking route between the Wellington Street Car Park and the Embankment. Improvements will comprise of improving the public realm along the route, as well as surfacing, wayfinding, and removal of street clutter. The public realm improvements will align with the LDA Public Realm Strategy for Peterborough City Centre.

3.3.50 The revised layout of Junction 39 as part of Package 2 will enable significant pedestrian and cycle improvements to be made in the area, particularly with regards to controlled crossing points to overcome the significant levels of severance in the area. Crossing the junction is currently difficult, with a mixture of controlled and uncontrolled crossing points, including an uncontrolled crossing over the three approach lanes of Boongate as shown in Figure 3.12 beneath.

Figure 3.12: Existing Uncontrolled Crossing over Boongate

3.3.51 Bishop's Road between Junction 37 and Junction 38 already has some excellent pedestrian and cycle facilities in the form of a shared-use path, and the improvements proposed will extend these facilities along the southern edge of Bishop's Road between Junction 38 and the A1139 Frank Perkins Parkway Bridge. The improvements will include widening the existing infrastructure, re-surfacing, and wayfinding.

3.3.52 The walking and cycling improvements will also include the Charters Pontoon and Stanground Boardwalk schemes. Both schemes will provide key new connections to the Embankment Area from both the east and west and connect into existing and under-utilised pedestrian and cycling networks.

3.3.53 Charters Pontoon will provide a crucial link under Town River Bridge. At present, pedestrians are required to cross over the A15 London Road, which is a busy route, to continue the walk along the south bank of the River Nene.

3.3.54 Stanground Boardwalk will provide a pedestrian link under the A1139 Frank Perkins Parkway alongside the south bank of the River Nene connecting Stanground with Fletton Quays.

3.3.55 Fletton Quays Footbridge is being developed as part of Peterborough's Towns Fund programme. The provision of the footbridge will provide a key connection between Fletton Quays and the Embankment Area, linking the sites with the wider areas of Woodston, Fletton and Stanground via the pontoon and boardwalk described above. The Towns Fund is also improving the walking and cycling infrastructure along the North Bank of the River Nene, including improved surfacing and lighting as well as installations of public art.

3.3.56 The University of Peterborough Planning Permission secured the implementation of a controlled crossing on Bishop's Road between Junction 38 and South Street.

3.4 Summary

3.4.1 This section has assessed the design and construction of each of the improvements in Package 1 and Package 2. The assessment has shown that there are not considered to be any insurmountable design or construction challenges with either package.

3.4.2 Package 1 includes a two lane off-slip from the A1139 Frank Perkins Parkway to Bishop's Road to form a new Junction 4a. A roundabout will connect the new slip road into the existing highway network at Bishop's Road. A new underpass will be included beneath the new slip road to ensure that walking and cycling connections between the City Centre and Fengate are maintained.

3.4.3 The land required to construct the new off-slip is within ownership of the Council. However, the provision of the new off-slip will impact the Bishop's Road recreation area, reducing its size.

3.4.4 The concept design has tried to minimise the impact on the Corsican Elms through realignment of the road, with only two trees requiring removal. Four other trees (of different species) will also need to be removed on the southern side of the recreation area.

3.4.5 Construction of the new northbound off-slip is not considered to be difficult, as much of the slip-road can be built off-line with night-time or weekend closures used for tie-ins at either end.

3.4.6 Package 2 includes the upgrade of the existing single carriageway to a dual carriageway between Junction 5 and Junction 39 by widening to the north of the existing road. The Star Road Bridge and the Mellows Close Subway will be widened to accommodate the dualling as part of the scheme.

3.4.7 The land required to construct the dualling is within the highway boundary or Community Related Asset (CRA) land which is controlled by the Council. The dualling of Boongate will impact the current turning head on Dickens Street which will require relocation Several parking spaces on Dickens Street may be lost to this relocation, as well as a portion of the tree and shrub belt, requiring complimentary landscaping works to offset the impact

3.4.8 Construction of this scheme can predominantly be undertaken off-line, with no disruption to the existing network. However, Star Road may need closing for a duration whilst the bridge widening works are undertaken. Similarly Mellows Close underpass will also require closure for a potentially lengthy duration. The street lighting will need to be moved to the central reserve once the road is widened, which will require a wider central reservation and therefore more land.

3.4.9 Consideration will need to be given on how best to minimise disruption to a key route into the City Centre from the Parkway Network, and what impacts and constraints are associated with night-time working in an urban area close to residential areas.

4. Environmental Assessment

4.1 Introduction

4.1.1 This chapter sets out the environmental assessment for Package 1 and Package 2. The environmental assessment has been focused on the significant new pieces of infrastructure in each package: the new northbound off-slip (Junction 4a) in Package 1; and the dualling of Boongate in Package 2 and will assist with determining the preferred option from an environmental perspective.

4.2 Environmental Assessment

4.2.1 An Environmental Appraisal has been completed for each of the following areas:

- Air Quality
- Archaeology and Cultural Heritage
- Landscape and Visual
- Biodiversity
- Noise and Vibration
- Water: Hydrology and Drainage
- Socio Economic and Community Impacts
- Socials and Geology.

4.2.2 The findings for each area are summarised in this Chapter. The full Environmental Assessment Report is included in Appendix B.

4.2.3 There are a number of interrelationships between the different environmental areas. For example, the historic environment and landscape in relation to the effects on the setting of built heritage assets, and biodiversity and water in relation to the effects on freshwater and intertidal habitat. Where there are interrelationships, they have been considered and reported in line with the appropriate guidance to prevent double counting of effects.

4.2.4 For each environmental area discussed below, baseline environmental conditions and constraints have been discussed, alongside operational and construction impacts. A Red Amber Green (RAG) system has been used to assess each environmental area to assist in determining environmental issues from the outset and ensure potential issues are appropriately addressed.

4.2.5 Table 4.1 presents the criteria have been used to determine the RAG ratings for individual environmental topics.

Table 4.1: RAG Criteria for Environmental Assessment

RAG Rating	Criteria for each rating
Red	A Red rating is for those environmental areas in which overall environmental effects (during construction and/ or operation phases) are likely to be significantly adverse, and which would be difficult to mitigate sufficiently (i.e., significant residual effects would be likely).
Amber	An Amber rating has been given to environmental areas where overall effects (during construction and/ or operation phases) would be potentially significant adverse but can be appropriately mitigated.
Green	A Green rating has been attributed to environmental areas where overall effects (both construction and/ or operation phase) are likely to be either Neutral or Beneficial (Slight, Moderate or Major) based on the current design.

4.2.6 The risk rating is preliminary and will need to be reviewed following more detailed environmental assessments. Once the preferred Package has been identified, it could be subject to a Planning Application under the Town and Country Planning Act 1990 (as amended). To support any Planning Application, further environmental assessment would be required for those environmental topics where there is potential for environmental effects.

4.3 Air Quality

4.3.1 There are no Air Quality Management Areas (AQMAs) within a 2km of the proposed northbound off-slip or Boongate Dualling.

Operational Impacts

4.3.2 Residential receptors located within 200m of the potential sites may experience a permanent benefit in terms of air quality impacts, although other roads may experience adverse effects.

4.3.3 Consideration for the wider area should also be given when assessing air quality and as such, the proposed car park has the potential to result in a reduction in traffic entering the City Centre and could therefore improve the air quality within the city.

4.3.4 At this stage in the assessment of each of the Packages, the overall effects upon Air Quality are difficult to determine. However, a full assessment of the potential effects upon Air Quality receptors, will be completed as part of the preliminary design, which will take account of air quality monitoring data and traffic data.

Construction Impacts

4.3.5 Construction plant and machinery have the potential to temporarily reduce air quality at nearby receptors, through emissions of nitrogen oxides (NOx), particulates (PM10 and PM2.5) and other combustion related pollutants. The likely duration of works and traffic management arrangements are still to be finalised but could influence mitigation requirements during construction.

4.3.6 Adverse effects resulting from dust emissions may also occur however the employment of good practice measures would reduce adverse effects. Assuming works are carried out in accordance with best practice and a Construction Environmental Management Plan is strictly implemented overall effects are likely to be 'Slight Adverse'.

RAG Rating

4.3.7 An Amber rating has been given for Air Quality for both proposed northbound off-slip or Boongate Dualling. Overall effects are likely to be 'slight adverse' during construction. Operational effects have the potential to be 'slight adverse due to additional traffic flow on the highway network.

4.3.8 At this stage in the assessment of options, it is not considered likely that there would be a substantial difference in the likely Air Quality effects between the two proposed options.

4.3.9 Further assessment will consider the impact of the preferred option at preliminary design stage.

Assessment Area	Northbound Off-slip (Package 1)	Boongate Dualling (Package 2)
Air Quality		

4.4 Archaeology and Cultural Heritage

4.4.1 There are no Scheduled Monuments within 1km of either the northbound off-slip or Boongate Dualling. There are no registered Parks and Gardens or Registered Battlefields within 1km of the proposed options.

4.4.2 Both the northbound off-slip or Boongate Dualling are within 1km of Peterborough City Conservation Area. The conservation area has a number of key landmark buildings including the Cathedral, the Guildhall, and the Church of St John the Baptist.

Operational Impacts

4.4.3 The new northbound off-slip has the potential to impact the setting of high value heritage asset, Peterborough Cathedral. Further design would need to be informed by a heritage assessment on the impacts on views to/from the Cathedral.

4.4.4 The dualling of Boongate is unlikely to affect the long-term viability of designated cultural heritage resources given the current highway setting.

Construction Impacts

4.4.5 The new northbound off-slip has an increased potential for unearthing unknown archaeological remnants within the greenbelt areas traversed by the site. Therefore, appropriate measures such as an archaeological watching brief or archaeological recording would be required to ensure any impact on archaeology can be appropriately mitigated.

4.4.6 Boongate Dualling is anticipated to have little potential for unearthing unknown archaeological remnants within the greenbelt areas traversed by the site.

4.4.7 For both options, strict implementation of a Construction Environmental Management Plan will be required during construction.

RAG Rating

4.4.8 Overall, the effects during construction at both sites would be significant with the potential for unknown archaeological finds to be uncovered and damaged during construction.

4.4.9 The new northbound off-slip has the potential to impact the setting of nearby designated assets such as Peterborough Cathedral. A thorough assessment of the impact would need to be undertaken as part of any further design work to take account of the significance of the scheme on the heritage in the area. The northbound off-slip has a red rating due to the potential higher risk to archaeology and cultural heritage during delivery of the scheme.

4.4.10 An amber rating has been attributed to Boongate Dualling.

Assessment Area	Northbound Off-slip (Package 1)	Boongate Dualling (Package 2)
Archaeology and Cultural Heritage		

4.5 Landscape and Visual Impact

4.5.1 There are no Areas of Outstanding Natural Beauty (AONB) or National Parks within the study area. The dominant pattern of the landscape at the proposed northbound off-slip and at Boongate comprises of areas of residential and commercial buildings, amenity grassland, vegetation and hard standing (associated with the existing road network).

4.5.2 Numerous visual receptors are located within both options theoretical Zone of Visual Influence.

Operational Impacts

4.5.3 Both proposed options have the potential to permanently alter the landscape character of the surrounding area through a perceptible visual increase in the area of hardstanding and the addition of above ground infrastructure such as street lighting.

4.5.4 Visual impacts are likely to be unavoidable given the varied elevation of the surrounding area and locations of proposed options.

4.5.5 The new northbound off-slip would be in an elevated position with prominent views from the city and surrounded by mature vegetation. Well-established Corsican Elm Trees may be affected by the proposals and therefore detrimental visual effects for a number of receptors may be unavoidable until reinstatement screening vegetation has matured (approximately 15 years).

4.5.6 There is also potential for visual impacts at night with the installation of new street lighting as part of either option. However, it may be possible to remove existing street lighting close to residential properties along Boongate as part of the dualling scheme (Package 2) due to changes to the Council's street lighting policy since the original infrastructure was installed. This would need to be confirmed through further highway design and road safety work. The northbound off-slip would need to be lit as it forms the approach to a junction (within 100 metres).

4.5.7 Given the urban nature of sites, and the presence of road and communications infrastructure within the locality, the tranquillity of the local area is not anticipated to be affected any further by the proposed options. Mitigation measures such as replanting would reduce permanent effects for many receptors in the long term.

4.5.8 Overall, given the high value local and surrounding landscape, the presence of numerous high value receptors, Peterborough Cathedral and the permanent installation of above ground infrastructure associated with both options, there is potential for significantly adverse landscape character and visual operational impacts on receptors without adequate mitigation. This would need to be fully developed as part of the Landscape and Visual Impact Assessment of the preferred option. This will need to consider if mitigation measures such as temporary or permanent fencing or screening may be necessary.

Construction Impacts

4.5.9 The presence of construction machinery, plant and stockpiling of materials would be likely to adversely impact upon the landscape character of the surrounding area.

4.5.10 Temporary changes to the landscape are considered to be unavoidable as a result of either option during the construction period, particularly given the varied elevation within the area. The clearance of vegetation during construction is likely to open-up views of the works area and would result in visual impacts on numerous receptors (high value receptors include residential properties and Parkland).

4.5.11 Vegetation clearance and construction machinery would also be visible from Peterborough Cathedral during construction of the new northbound off-slip which would be likely to result in adverse effects on landscape character for a temporary period. An effective mitigation strategy to minimise effects through screening and minimising the storage of materials for example would need to be developed.

RAG Rating

4.5.12 An Amber rating has been attributed to Landscape and Visual Impact. Overall, effects during construction and operation have potential to be 'significant adverse' for both the proposed northbound off-slip and Boongate Dualling. However, given the context of the location and with appropriate mitigation measures and enhancements put in place, it is anticipated that these adverse effects can be reduced through appropriate mitigation. At this stage in the assessment of options, it is not considered likely that there would be a substantial difference in the likely landscape and visual effects between either of the proposed options. Therefore, both the northbound off-slip and Boongate Dualling have been assigned an amber rating.

Assessment Area	Northbound Off-slip (Package 1)	Boongate Dualling (Package 2)
Landscape and Visual Impact		

4.6 Biodiversity

4.6.1 The are no statutory designated sites for nature conservation within the study area. No Special Protection Areas, Ramsar or National Nature Reserves have been identified within the vicinity of the proposed options.

4.6.2 The Nene Washes Special Protection Area (SPA), Ramsar and Site of Special Scientific Interest (SSSI) is located approximately 1.2km south of each option at its closest point.

4.6.3 None of the sites contain ancient woodland.

Operational Impact

4.6.4 Operational impacts resulting from both the northbound off-slip and Boongate Dualling are likely to include the potential loss of habitat for bats and breeding birds.

4.6.5 Therefore, there is potential for habitat creation and enhancement to be a requirement for either option, to ensure that the overall project achieves a net biodiversity gain (which is in line with local and national policy). Assuming this mitigation and / or enhancement measures are put in place, overall effects on protected species and habitats are likely to be minimised.

Construction Impact

4.6.6 There is potential for adverse effects upon protected species, in the absence of mitigation, on bats and breeding birds with the requirement for removal of vegetation and mature trees, as well as disturbance from temporary construction machinery and lighting. Targeted ecological surveys for protected species would need to be undertaken in advance of the works of either option which would inform any licence that may be required (should protected species be confirmed at the site).

4.6.7 With appropriate mitigation and enhancement measures, and with works undertaken at an appropriate time of year (which would minimise effects to relevant protected species, if present), overall effects on nature conservation are likely to be minimised.

4.6.8 The area adjacent to both the proposed northbound off-slip and Boongate Dualling support foraging and commuting bats, and therefore night-time working or lighting during the construction phase should carefully consider how to minimise potential disturbance.

RAG Rating

4.6.9 An amber rating has been attributed to Biodiversity for both the proposed northbound off-slip and Boongate Dualling. Overall, effects during the construction and operation phases have the potential to be significantly adverse. However, with appropriate mitigation and enhancement measures put in place, adverse effects are likely to be reduced.

4.6.10 From an ecological perspective and based on the findings from the ecological work undertaken to date, it is considered that Option 1 would be more ecologically favourable than Option 2. However, at this stage of the assessment it is not considered likely that there would be a substantial difference in the likely impacts upon nature conservation features between the proposed options. Therefore, both the northbound off-slip and Boongate Dualling are considered to be amber.

Assessment Area	Northbound Off-slip (Package 1)	Boongate Dualling (Package 2)
Biodiversity		

4.7 Noise and Vibration

4.7.1 Residential properties, places of worship, schools and numerous commercial dwellings have been identified within 500m of the proposed sites.

Operational Impact

4.7.2 Both of the proposed options would be likely to result in a change in noise and vibration levels, through the presence of numerous sensitive receptors within close proximity once built. through the presence of numerous sensitive receptors within close proximity of the scheme. Therefore, monitoring of the baseline noise and vibration levels within the study area would be necessary to ensure operational noise and vibration levels are adequately assessed.

4.7.3 With appropriate mitigation, potentially including acoustic fencing or bunds or secondary glazing for adversely effected properties, the overall effects are likely to be minimised.

Construction Impact

4.7.4 Numerous sensitive receptors are located within close proximity of both the proposed northbound off-slip and Boongate Dualling. They are both likely to alter noise and vibration baseline levels during construction, through construction activities and the presence of construction machinery and vehicles, although the varied topography of the area is likely to have implications on the noise conditions at receptors.

4.7.5 The effect upon the noise environment for sensitive receptors would be dependent on the type of construction plant involved, time of day in which works will be undertaken and the duration of works. Measures setting out noise restrictions will need to be agreed through consultation with the local authority prior to construction. At this stage in the assessment of options, the overall effects upon noise sensitive receptors are difficult to determine.

4.7.6 However, a full assessment of the potential Noise and Vibration effects would be completed for the preferred option, which will include appropriate mitigation requirements.

4.7.7 Strict implementation of the CEMP during construction would be required, and acoustic barriers may be required to protect properties within very close vicinity.

RAG Rating

4.7.8 There is the potential for either scheme to result in significant effects during construction and operation. However, with appropriate mitigation put in place adverse effects are likely to be reduced to an acceptable level (through the provision of noise barriers, secondary/double glazing, and low noise surfacing).

4.7.9 At this stage in the assessment of site options, it is not considered likely that there would be a substantial difference in the likely impacts upon the noise and vibration environment for sensitive receptors between any of the proposed sites. Therefore, both Package 1 and Package 2 are therefore considered to be Amber.

4.7.10 Further assessment will be undertaken as part of the preliminary design of the preferred option to understand the impact and any mitigation measures that will be required in during the construction and operational phases.

Assessment Area	Northbound Off-slip (Package 1)	Boongate Dualling (Package 2)
Noise and Vibration		

4.8 Water Environment: Hydrology and Drainage

4.8.1 The study area for the appraisal was defined as the area of each option and any surface water features, groundwater features or water dependent designated sites located up to 0.5km from the site. Both the proposed northbound off-slip and Boongate are located in Flood Zone 1.

There are no key surface water features or designated sites within the study area.

Operational Impacts

4.8.2 Both the proposed northbound off-slip and Boongate Dualling would result in an increase in hardstanding (and impermeable area) which has the potential to increase the risk of flooding. Alteration to flow characteristics could impact upon the geomorphology of the surrounding surface water drains that may affect channel erosion and deposition processes. A Flood Risk Assessment (FRA) would be required for the preferred option.

4.8.3 The use of Sustainable Drainage Systems (SuDs) should be used where possible. Overall long-term effects are likely to be minimised if mitigation measures and drainage are designed to ensure there will be no additional flood risk from surface water runoff.

Construction Impacts

4.8.4 Although the aquifer at depth is in an area of medium-high groundwater vulnerability, proposed activities are confined to surface strata and as such there is limited connectivity and no pathway for significant risk to occur. Mitigation measures outlined within a CEMP will further prevent any adverse impact on key features.

RAG Rating

4.8.5 A green rating has been attributed to water environment. Both the proposed northbound off-slip and Boongate Dualling were considered to have an assessment score of neutral because they have no appreciable effect on the identified features. The risk to water quality and biodiversity of the surrounding surface water features is low. All watercourses are artificial drains and have low geomorphological and ecological value.

4.8.6 An increase in hardstanding (and impermeable area) which has the potential to increase the risk of flooding. Operational drainage will be designed to ensure there will be no additional flood risk from surface water runoff.

Assessment Area	Northbound Off-slip (Package 1)	Boongate Dualling (Package 2)
Water Environment: Hydrology and Drainage		

4.9 Socio-Economic and Community Impacts

4.9.1 Local communities are present within the vicinity of the proposed northbound off-slip and Boongate Dualling.

4.9.2 The land uses within the area predominantly comprises of residential housing, social infrastructure, highways, on/off-street car parking and recreational land.

4.9.3 The area surrounding the proposed northbound off-slip also provides significant urban green space.

Operational Impacts

4.9.4 Boongate Dualling is likely to benefit the local community with potential pedestrian and cyclist infrastructure being delivered along Bishop's Road and St John's Street. Although this may be possible with the new northbound off-slip, the volume of traffic on Bishop's Road and St John's Street may deter trips by sustainable travel modes. The potential reduction in congestion along Bishop's Road would also benefit the local community and reduce severance between the residential areas and the Embankment.

4.9.5 The proposed northbound off-slip will result in a loss in green space which is used by the community, i.e., specifically the area close to the proposed northbound off-slip which is currently used as a recreational ground.

Construction Impacts

4.9.6 During construction, both of the proposed options are likely to result in an increase in construction jobs which is likely to benefit the local economy. However, disturbance because of construction related activities and machinery may temporarily affect receptors within the vicinity of the schemes including residential properties, places of worship and schools. There is also the potential for community land to be temporarily affected, and the construction of the northbound off-slip would impact the adjacent urban green space which is used for recreational activities.

RAG Rating

4.9.7 A green rating has been attributed to Socio-economic and community impacts for Boongate Dualling. During the construction phase a Slight Adverse effect is anticipated as a result of disturbances for the local community. Long term effects may vary, but on balance they are likely to benefit the community. However, the location of the proposed northbound off-slip adjacent to the recreational urban green land is a potential higher risk to the delivery of this option.

Assessment Area	Northbound Off-slip (Package 1)	Boongate Dualling (Package 2)
Socio-Economic and Community Impacts		

4.10 Soils and Geology

4.10.1 No Geological SSSI or Regionally Important Geological or Geomorphical (RGIS) have been identified within 1km of either of the proposed options.

4.10.2 The proposed northbound off-slip is located within <50m of a Historic Inert Landfill site. The site comprises two separate parcels of land within the wider site which formerly contained the Potters Way sewage treatment works.

4.10.3 No historic or authorised landfills have been identified within the extent of Boongate Dualling.

4.10.4 Agricultural Land Classification (ALC) surveys would likely indicate that the land around the proposed sites is mostly Grade 4 (poor) urban.

Operational Impacts

4.10.5 Contaminants are unlikely to become permanently mobilised as a result of the either option, with soils likely to be regraded (where possible) to their previous quality.

4.10.6 The proposed northbound off-slip will result in the permanent loss of recreational urban green land if taken forward.

Construction Impacts

4.10.7 Excavations would be required for both of the proposed options, although it is not known to what depth this is required.

4.10.8 There is potential for contaminated land to be present within either of the site extents, and as a result, it will be necessary to consult with Peterborough City Council's Contaminated Land Specialist to determine appropriate soil sampling requirements for the options. A full Ground Investigation would be prepared in advance of works, and where necessary, an appropriate remediation strategy put in place.

RAG Rating

4.10.9 A green rating has been attributed to Soils and Geology. Overall, there is potential for a 'Slight Adverse' impact during construction, with the potential disturbance of contaminated land. However, with appropriate mitigation put in place adverse effects are likely to be reduced to an acceptable level.

4.10.10 At this stage in the assessment of the two options, it is not considered likely that there would be a substantial difference in the likely impacts upon geology and soils. There both the northbound off-slip and Boongate Dualling are rated as green.

Assessment Area	Northbound Off-slip (Package 1)	Boongate Dualling (Package 2)
Soils and Geology		

4.11 Summary of Environmental Assessment

4.11.1 Table 4.2 below shows the summary of the RAG status for each of the environmental areas for both the northbound off-slip and Boongate Dualling.

Table 4.2: Summary of Environmental Assessment

Environmental Area	Northbound Off-slip (Package 1)	Boongate Dualling (Package 2)
Air Quality		
Archaeology and Cultural Heritage		
Landscape and Visual		
Biodiversity		
Noise and Vibration		
Water: Hydrology and Drainage		
Socio Economic and Community Impacts		
Soils & Geology		
Summary	• The northbound off-slip is situated upon recreational urban green land and should be noted as a potential higher risk to the delivery of the scheme. • It has potential to impact the setting of high value heritage asset Peterborough Cathedral. • Well-established Corsican Elm trees which have a high community asset value situated adjacent to the proposed off-slip and will be affected.	• Boongate provides a favourable habitat for protected species comprising trees, tall ruderals, wildflowers, and scrub.

4.11.2 The overall environmental assessment of the northbound off-slip is Amber and for Boongate Dualling is Amber/Green. This is based on the assumption that appropriate mitigation would be included as part of the scheme design and construction methodology and would be fully developed as the either scheme progresses.

4.11.3 Mitigation may take the form of a CEMP to be implemented by the Contractor during construction, and a fully integrated landscape and ecological design, which would minimise long-term adverse effects upon nature conservation and the local landscape and would provide opportunities for biodiversity enhancements. However, residual risks remain that require further investigation/ environmental assessment, to fully determine the likely scope and scale of mitigation requirement, such as the potential requirement for acoustic attenuation or landscaping.

4.11.4 Protected species surveys may also be required, which would inform the potential requirement for works to be progressed under a licence to be granted by Natural England (where protected species are present), with appropriate mitigation and monitoring in place.

4.11.5 It should be noted that this preliminary assessment has identified that there are a number of additional constraints for the northbound off-slip when compared to Boongate Dualling and which present a greater risk to the delivery. The proposed northbound off-slip is also partially located on recreational ground/urban green space. As a result, the environmental risk for this site is considered to be Amber.

4.11.6 Each of the proposed options exceed the threshold of 1 hectares of development. As a result, both options are considered as Schedule 2 development under the EIA Regulations and will require Screening for Statutory EIA. The Screening Opinion will be made by the Local Planning Authority (LPA) and will be determined according to the likelihood of the proposals to result in significant adverse effects upon the environment. Where statutory EIA is required, this would be prepared in the form of an Environmental Statement (ES), to be submitted to the LPA in support of any Planning Application. Where statutory EIA is not required, stand-alone environmental assessments may still be required to accompany any Planning Application.

5. Operational Assessment

5.1 Introduction

5.1.1 This chapter sets out the operational modelling undertaken for Package 1 and 2. The purpose of the assessment is to compare the operational performance and impact of each package on the highway network in the study area.

5.2 Modelling Approach

5.2.1 A bespoke Aimsun Next (version 20) microsimulation model was built for the purpose of assessing the two packages in detail.

5.2.2 Aimsun Next is based on car following and lane change theory which allows for the anaylysis of motorised traffic operations under conditions such as:

- Lane configuration
- Traffic composition
- Traffic controls such as fixed or actuated traffic signals and give ways
- Public transport stops

5.2.3 The Aimsun Next traffic model has been constructed to represent the morning (AM) peak hour from 08:00 to 09:00, and an evening (PM) peak hour from 17:00 to 18:00, in order to represent the most congested time periods. These peak periods were defined from the traffic surveys undertaken across the study area in September 2019, and follow the standard peak times experienced across Peterborough. A 15 minute warm-up period has been added before each model peak to populate the model network with vehicles and create representative peak period traffic conditions for undertaking peak hour analysis.

5.3 Model Development

5.3.1 A 2019 base model was built using traffic flows and distributions taken from the Peterborough Transportation Model 3 (PTM3) Strategic Saturn Model. PTM3 was used to identify the impacts of the two Packages at a strategic level as reported in the SOBC.

5.3.2 The model was validated and calibrated, using traffic counts and journey times, to ensure it represented the traffic conditions experienced by drivers on this part of the network.

5.3.3 To understand traffic conditions in future years, forecast year matrices from the PTM3 model were used to adjust the base year traffic matrices for the 2026 forecast year. Once growth was applied, a Do Minimum (DM) scenario was created.

5.3.4 Growth beyond 2026 has not been reported for the operational modelling. It was found that growth beyond 2026 exceeded the network capabilities operationally within microsimulation. Future strategies, such as the City Centre Transport Vision, will likely introduce transport interventions beyond 2026 that better manage the demand entering the study area and limit the impact of planned developments on the highway network.

5.3.5 Package 1 and Package 2 improvements were created in the model to create a Do-Something scenario. The operational modelling identified delay occuring at Junction 39 in both Packages, so a scheme to signlaise the junction was developed and forms part of both Package 1 and Package 2.

5.3.6 Each Package was tested to understand its impact on the operational performance on the network.

5.3.7 Package 1 includes the following schemes within the operational model:

- New northbound off-slip linking the A1139 Frank Perkins Parkway with Bishop's Road (Junction 4a)
- Junction 38 – 40m flare extension on Bishop's Road East
- Junction 5 – signalisation of the A1139 Frank Perkins Parkway southbound off-slip
- Boongate / Fengate Junction – 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East
- St John's Street / Wellington Street – creation of a roundabout.

Package 2

5.3.8 Package 2 includes the following schemes:

- Dualling of Boongate between Junction 5 and Junction 39
- Junction 38 – 40m flare extension on Bishop's Road East
- Junction 5 – signalisation of the A1139 Frank Perkins Parkway northbound and southbound off-slip
- Boongate / Fengate Junction – 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East
- St John's Street / Wellington Street – creation of a roundabout.

5.4 Model Results

5.4.1 Performance of the two packages has been assessed on sub-path performance and then for Level of Service (LOS) of the junctions within the study area. The model results are discussed in turn below.

5.5 Sub-Path Performance

5.5.1 Three sub-paths were selected for key routes in the study area to understand the impact of Package 1 and Package 2 in terms of flow, delay and travel time.

5.5.2 The routes selected were:

- Boongate (between Junction 5 and Junction 39)
- Vineyard Road (between Junction 39 and Junction 38)
- Bishop's Road / Fengate (between Junction 38 and Boongate / Fengate junction).

5.5.3 These three routes were chosen as they are the key routes between the A1139 Frank Perkins Parkway in either Package 1 or Package 2.

5.5.4 It is important to note that the figures presented in the tables represent vehicles that complete a jouney along the whole route (or sub-path). Any vehicles leaving or entering the route are not accounted for.

AM Peak Hour

5.5.5 Table 5.1 shows the Sub-path results for the AM Peak Hour.

Table 5.1: Sub-Path Results: AM Peak Hour

Road	Direction	Flow (vehicles)				Delay (seconds)				Travel Time (seconds)			
		Base	DM	P1	P2	Base	DM	P1	P2	Base	DM	P1	P2
Boongate	Eastbound	1,175	1,123	738	1,068	24	16	13	59	61	53	50	59
	Westbound	1,434	1,044	861	1,509	47	222	126	29	91	266	170	73
Vineyard Road	Northbound	785	848	865	789	29	20	118	39	68	60	158	79
	Southbound	607	589	384	647	31	138	610	94	71	178	650	135
Bishop's Road	Eastbound	97	105	113	107	47	56	75	51	157	166	185	160
	Westbound	227	249	265	255	53	108	219	110	173	228	340	231

Base to Do Minimum

5.5.6 It is normally expected for flow to increase between the Base and Do Minimum scenarios, due to growth. However, Boongate and Vineyard Road southbound both decrease in flow, supposedly resulting in a decrease in delay. The model indicates that these trips are no longer able to reach Boongate and Vineyard Road due to increased delay at either end of these links, such as at Junction 39, Junction 38 and Junction 5.

Package 1

5.5.7 In Package 1, the desire lineThe route for vehicles wishing to access Wellington Street Car Park in Package 1 is via the new northbound off-slip, Bishop's Road (westbound) and Vineyard Road / St John's Street (northbound).

5.5.8 Both the delay and travel time on Bishop's Road / Fengate (westbound) increase by approximately 111 seconds. On Bishop's Road / Fengate (eastbound), the increase in delay and travel time is approximately 18 seconds. This increased demand from vehicles on these routes as a result of vehicles using the new northbound off-slip to access the City Centre and Fengate Industrial Area rather the Junction 5.

5.5.9 Examination of the model shows significant queuing on Bishop's Road and the new northbound slip in the AM Peak Hour, as shown in the screen shot in Figure 5.1.

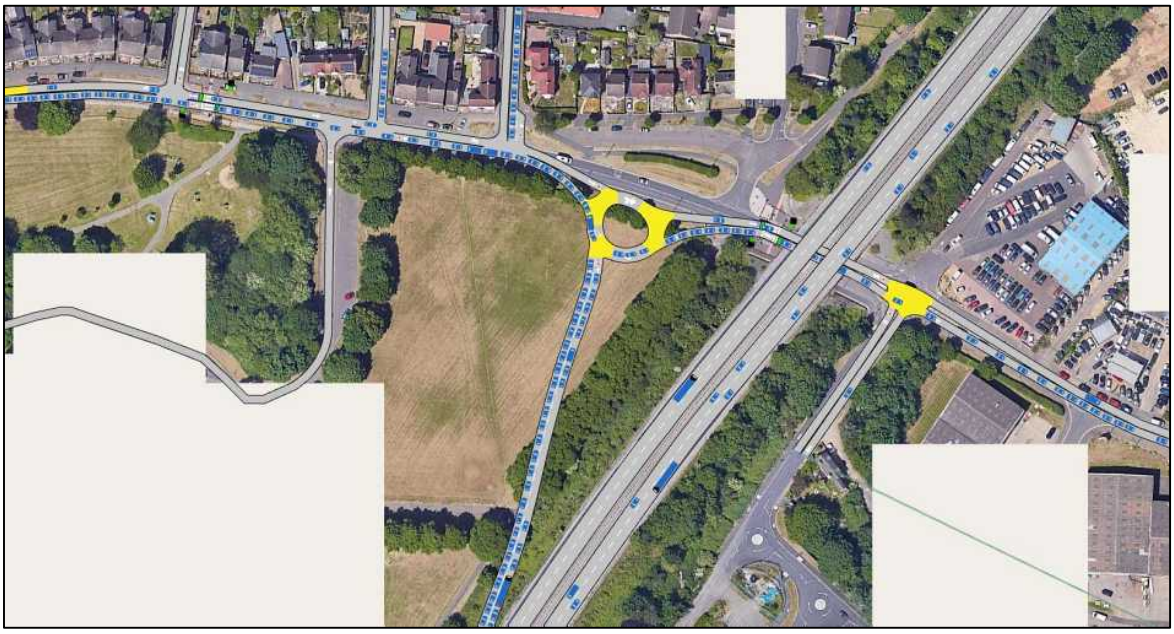


Figure 5.1: AIMSUN Next Screenshot of New Northbound Off-Slip (AM Peak Hour - 8:30am)

5.5.10 Figure 5.1 shows that the provision of a new off-slip causes gridlock on the surrounding local highway network. Significant queuing is experienced on the new northbound off-slip due to the difficulty vehicles have exiting the slip road on to Bishop's Road or Fengate. The queuing extends back on to the A1139 Frank Perkins Parkway, which could negatively impact the performance of the Parkway Network in this location.

5.5.11 In addition, significant queuing can be seen on Fengate for vehicles travelling westbound towards the new roundabout, as well as on Bishop's Road westbound towards Junction 38.

5.5.12 Further improvements to Junction 38 may be possible to reduce queuing and delay. However, Bishop's Road is a low-capacity road, with residential properties to the north. There are no options to improve Bishop's Road to increase the capacity without significantly changing the nature of the road, and the road is very heavily constrained on both sides as it enters Fengate. In addition, any scheme to improve the capacity of Bishop's Road could reduce the land available for development on the Embankment.

5.5.13 Vineyard Road / St John's Street (northbound) also experiences an increase in delay and travel time. In Package 1, the delay is 117 seconds, which is approximately 6 times longer than the delay experiened in the DM Scenario. Travel time along the route is also approximately three times longer at 157 seconds. This is likely because many of the trips destined to Wellington Street Car Park are now coming from the new slip road, resulting in them waiting to make a right turn into Wellington Street (Or continuing up to Junction 39) causing greater delay on this link.

5.5.14 Figure 5.2 shows a model screenshot of the study area approximately halfway through the AM Peak Hour.

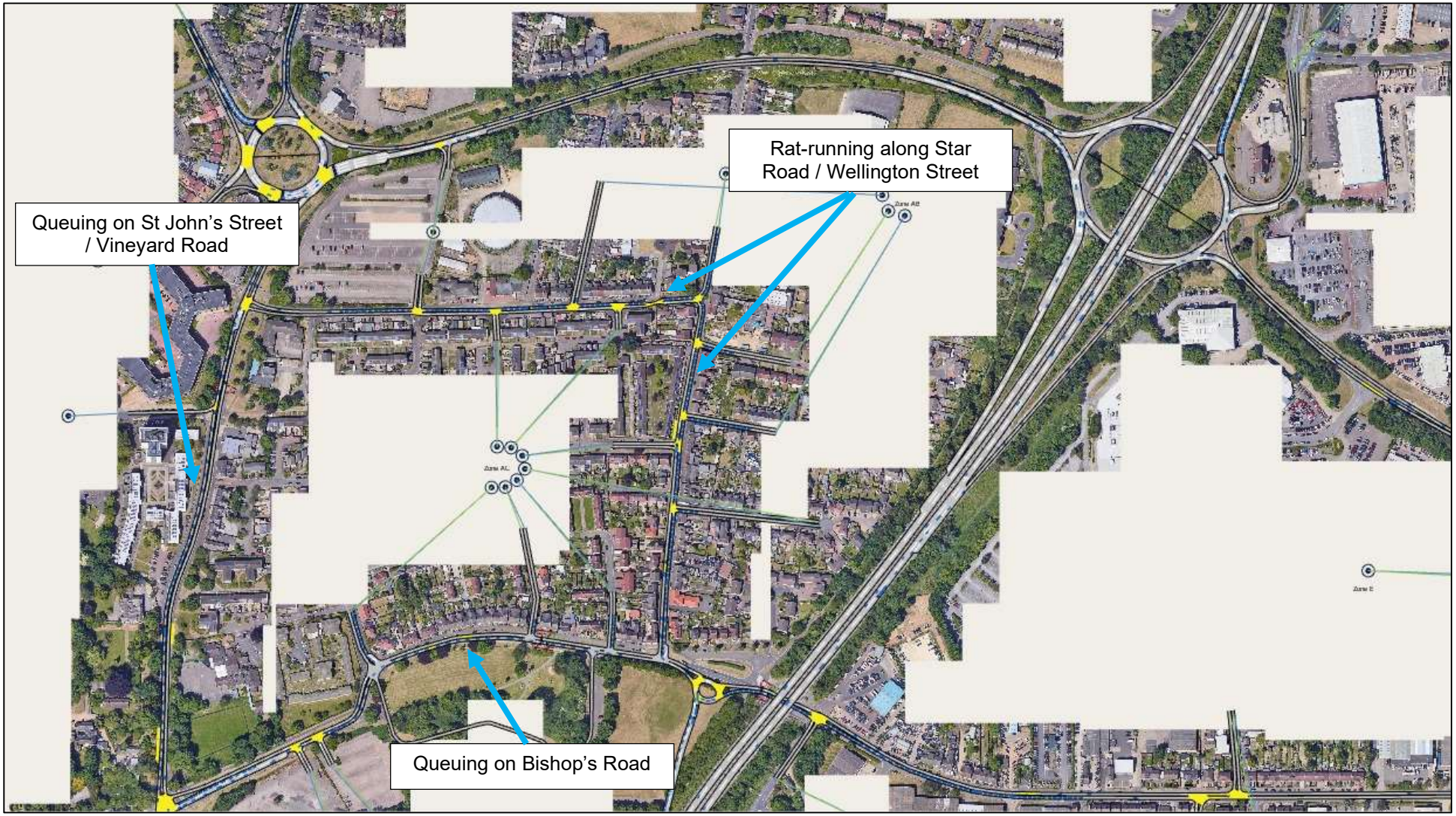


Figure 5.2: AIMSUN Next Screenshot of Vineyard Road (AM Peak Hour - 8:30am)

5.5.15 The screenshot shows significant queuing along Vineyard Road / St John's Street. Similar to Bishop's Road, it is a low-capacity link and there are very few options to singificantly increase the capacity of this route.

5.5.16 Figure 5.2 also shows significant queues on Star Road. This is likely to be vehicles re-routing along Star Road in both directions to avoid delay on Bishop's Road, Vineyard Road and at Junction 38. Star Road is a residential route with traffic-calming to deter re-routing vehicles. Increasing the number of vehicles along this route would not be acceptable.

5.5.17 Package 1 reduces flow, delay and travel time on Boongate in both directions. This is a result of traffic using the new northbound off-slip to access the City Centre rather than Junction 5.

Package 2

5.5.18 In Package 2, vehicles will travel via Junction 5 and Boongate (westbound) to access the parking at Wellington. Table 5.1 shows a increase in demand on Boongate (westbound) of nearly 500 vehicles in the AM Peak Hour. Although there is a significant increase in flow, there is only a small increase in travel time (6 seconds). The delay along the route increases by approximately 40 seconds, however this is likely to be due to the introduction of traffic signals at Junction 39.

5.5.19 Boongate Dualling will provide a high capacity link direct from the A1139 Frank Perkins Parkway to the Wellington Street Car Park. Despite the significant increase in flows, the impact on delay and travel time is small, therefore the proposed improvements accomodate the additional traffic and Boongate operates efficiently.

5.5.20 Package 2 reduces delay and travel time on Vineyard Road / St John's Street and Bishop's Road / Fengate in both directions. Figure 5.3 shows a screenshot of the study area in the AM Peak Hour.

Figure 5.3: AIMSUN Next Screenshot of Study Area with Package 2 (AM Peak Hour - 8:30am)

5.5.21 Figure 5.3 shows very little queuing and delay on the network during the AM Peak Hour, and no re-routing on Star Road.

PM Peak Hour

5.5.22 Table 5.2 shows the Sub-path results for the PM Peak Hour.

Table 5.2: Sub-Path Results - PM Peak Hour

Road	Direction	Flow (vehicles)				Delay (seconds)				Travel Time (seconds)			
		Base	DM	P1	P2	Base	DM	P1	P2	Base	DM	P1	P2
Boongate	Eastbound	1,586	1,495	1,140	1,344	71	26	14	18	108	63	51	55
	Westbound	887	876	343	1,021	10	30	128	18	54	75	172	61
Vineyard Road	Northbound	715	755	861	715	20	36	51	27	59	76	90	66
	Southbound	539	467	235	539	51	262	693	134	92	302	733	176
Bishop's Road	Eastbound	109	113	105	118	44	68	93	60	154	177	202	170
	Westbound	220	254	308	297	41	78	117	78	160	198	237	198

Base to Do Minimum

5.5.23 It is normally expected for flow to increase between the Base and Do Minimum scenarios, due to growth. However similar to the AM Peak, Boongate and Vineyard Road southbound both decrease in flow. Significant increases in delay are also observed with Vineyard Road southbound increasing from 51 seconds of delay to 262 seconds. Boongate Eastbound is the only link that experiences a decrease in delay between the Base and Do Minimum, although this is due to the decreased flow stemming from delays at Junction 39.

Package 1

5.5.24 In the PM Peak, vehicles are likely to be exiting the City Centre area towards the Parkway Network. The new northbound off-slip does not accomodate these trips, therefore vehicles will use existing routes; Vineyard Road and Boongate.

5.5.25 Package 1 increases the delay and travel time on all routes except Boongate (eastbound). This suggests the network is not performing as efficiently as it could even with improvements, particularly on those routes which see a decrease in flow.

5.5.26 Boongate (eastbound) has a reduction in vehicle flow of approximately 350 vehicles, this is likely to be a result of the Junction 39 signals slowing the rate at which trips bound to Boongate can get there. Whilst this seems to be a disbenefit, other movements around the junction are likely to be benefitting greatly from this improvement. In addition, Boongate / Fengate junction is operating more effectively therefore vehicles may choose this route instead of Boongate to reach Junction 5 and the Parkway Network to avoid delay on Vineyard Road / St John's Street.

5.5.27 Figure 5.4 shows a screenshot of the study area for Package 1 in the PM Peak Hour.

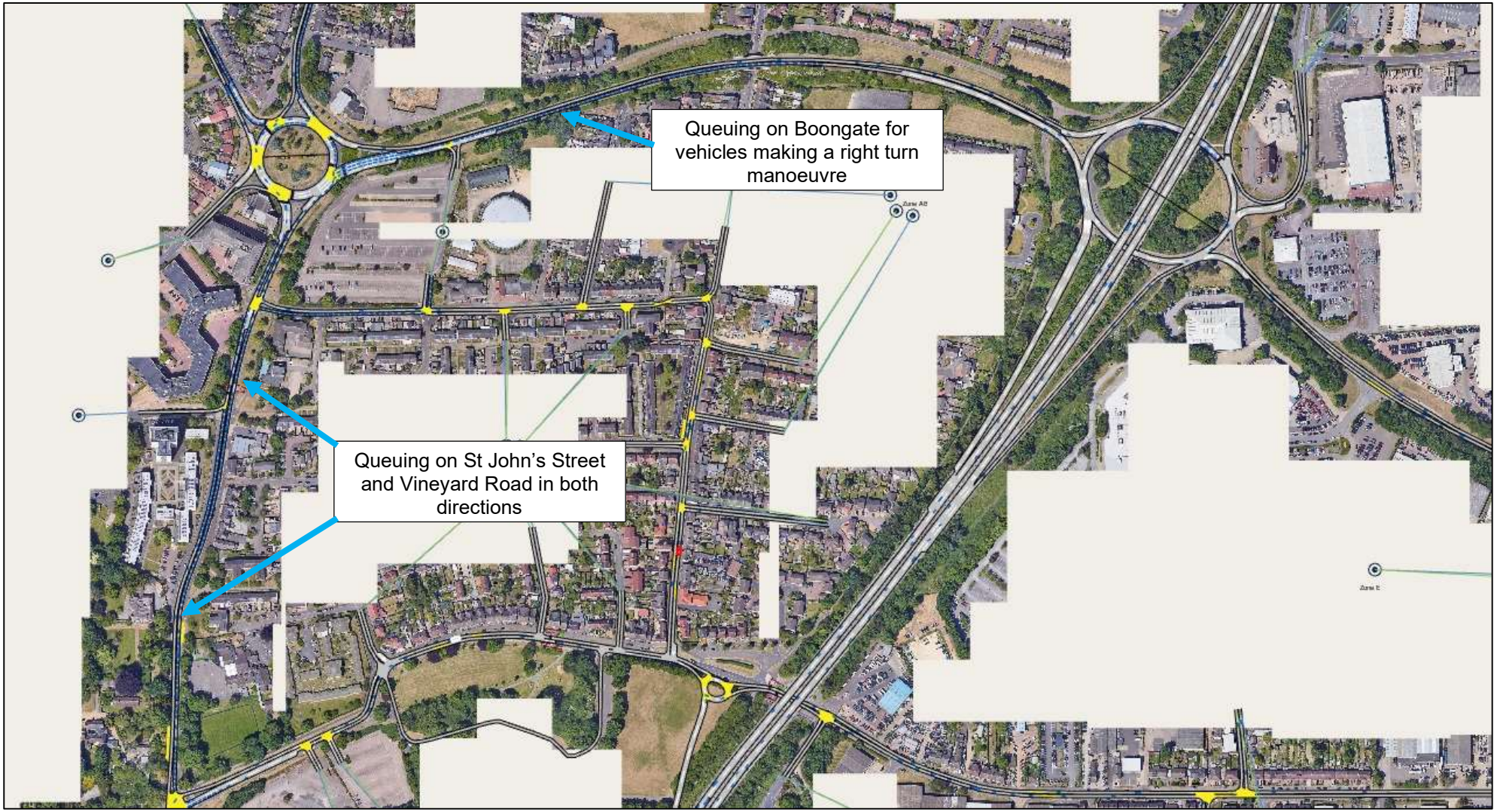


Figure 5.4: AIMSUN Next Screenshot of Study Area with Package 1 (PM Peak Hour)

5.5.28 Figure 5.4 shows signficant queuing and delay on Vineyard Road / St John's Street.There is also queues on the approaches to Junction 39, particularly for vehicles wishing to make a right turn manouvre.

Package 2

5.5.29 In the PM Peak Hour, Package 2 decreases delay and travel time on all but one of the routes presented in Table 5.2. Boongate (westbound) sees a negligible increase in delay and travel time of less than 1 second. This suggests the network is operating efficiently.

5.5.30 Figure 5.5 shows a screenshot of the study area for Package 2 in the PM Peak Hour.

Figure 5.5: AIMSUN Next Screenshot of Study Area with Package 2 (PM Peak Hour)

5.5.31 Figure 5.5 shows the network across the study area working efficiently with minimal queuing and delay. There is some queuing on the Boongate (eastbound) approach to Junction 5 for vehicles wishing to make a right-turn manoeuvre. A two-lane exit on the A1139 Frank Perkins Parkway southbound on-slip will be investigated at the next stage to see if this delay can be minimised.

5.6 Overall Junction Performance

5.6.1 Junction performance has been assessed using the Level of Service Indicator (LOS)

5.6.2 The LOS indicator has also been included in order to provide a reference to junction performance. The LOS is a concept derived from the American Highway Capacity Manual (2000). It rates performance based upon queue delay thresholds on an 'A' to 'F' grading as follows:

- LOS A – 0 to 10 seconds
- LOS B – 10 to 20 seconds (10 to 15 seconds for unsignalised junctions)
- LOS C – 20 to 35 seconds (15 to 25 seconds for unsignalised junctions)
- LOS D – 35 to 55 seconds (25 to 35 seconds for unsignalised junctions)
- LOS E – 55 to 80 seconds (35 to 50 seconds for unsignalised junctions)
- LOS F – Over 80 seconds (over 50 seconds for unsignalised junctions)

5.6.3 The LOS for a junction is based on the average of the queue delay on the approaches, weighted by the flow of each apporach, according to the same ranges as above.

5.6.4 A LOS of E is considered to be at capacity, whilsy an LOS of F is considered to be over capacity.

AM Peak Hour

5.6.5 Table 5.1 details the overall LOS for each junction within the study area for the AM Peak Hour. The cell is highlighted in green where the LOS is maintained or improved compared to the Do Minimum Scenario. Green indicates an improvement in performance over the DM (or an LOS remains the same), and junctions that perform worse than the DM have been highlighted in red.

Table 5.1: Level of Service for Junctions in Study Area – AM Peak Hour

Junction	Level of Service		
	DM	P1	P2
Junction 37	B	B	A
Junction 38	E	F	D
St John's Street / Wellington Street	A	A	A
Junction 39	C	D	C
Junction 5	C	B	B
Boongate / Fengate	C	D	C

5.6.6 Package 1 improves or maintains the overall LOS for three junctions within the study area in the AM Peak Hour. However, the Package does not improve the performance of Junction 38, which maintains a LOS rating of F, and is operating over-capacity.

5.6.7 Package 2 improves or maintains the overall LOS for all the junctions within the study area. All of the junctions perform with a LOS of D or above.

PM Peak

5.6.8 Table 5.2 details the overall LOS for each junction within the study area in the PM Peak Hour. The cell is highlighted in green where the LOS is maintained or improved compared to the Do Minimum Scenario. Green indicates an improvement in performance over the DM (or an LOS that remains the same), and junctions that perform worse than the DM have been highlighted in red.

Table 5.2: Level of Service for Junctions in Study Area – PM Peak Hour

Junction	Level of Service		
	DM	P1	P2
Junction 37	B	B	A
Junction 38	F	F*	E
St John's Street / Wellington Street	A	C	A
Junction 39	E	D	C
Junction 5	D	B	C
Boongate / Fengate	C	D	C

**Note that despite being LOS in both scenarios, the level of delay increases at this junction in Package 1.*

5.6.9 In the PM Peak Hour, Package 1 improves or maintains the LOS at four junctions across the study area. However, Junction 38, maintains a LOS rating of F, which is considered to be over capacity.

5.6.10 Package 2 improves or maintains the LOS at all the junctions across the study area. However, the improvement at Junction 38 is only marginal with an LOS of E compared to F in the DM Scenario.

5.6.11 To further understand the impact of each of the Packages at the junctions in the study area, assessment of the approaches to each junction has been undertaken. The assessment considers flow, mean queue length, queue delay and LOS for each approach.

5.7 Junction Performance by Approach

AM Peak Hour

5.7.1 Table 5.3 shows the performance for each junction by approach for the AM Peak Hour for both Package 1 and Package 2. The cell is highlighted in green where the LOS is maintained or improved compared to the Do Minimum Scenario. It is highlighted in red where the LOS is worse that the Do Minimum and is operating at or over-capacity (LOS of E or F).

Table 5.3: Level of Service for Appraoches to Junctions in Study Area – AM Peak Hour

Junction	Approach	Flow			Mean Queue Length (m)			Queue Delay (secs per veh)			Level of Service (LOS)		
		DM	P1	P2	DM	P1	P2	DM	P1	P2	DM	P1	P2
Junction 37	A15 Bourges Boulevard	256	255	264	3	3	3	15	15	13	B	C	B
	Bishop's Road	262	211	271	2	2	2	11	12	11	B	B	B
	A15 London Road	364	357	372	1	2	2	6	5	6	A	A	A
Junction 38	Vineyard Road	187	118	194	15	28	12	80	354	62	F	F	F
	Bishop's Road (E)	121	192	128	10	11	5	58	79	46	F	F	E
	Bishop's Road (W)	263	256	275	2	3	1	10	16	2	B	C	A
St John's Street / Wellington Street	St John's Street (N)	240	134	216	0	0	0	0	0	0	A	A	A
	Wellington Street	76	69	70	2	3	3	21	51	44	C	F	E
	St John's Street (S)	228	250	249	0	0	0	0	0	0	A	A	A
Junction 39	Eastfield Road	127	61	102	3	12	9	44	102	73	E	F	F
	Boongate	265	218	386	2	4	3	14	22	13	B	C	B
	St John's Street	262	278	246	1	4	3	7	21	16	A	C	B
	New Road	39	39	39	0	0	0	10	5	8	B	A	A
	Crawthorne Road	219	144	212	11	10	6	41	58	30	E	E	C
Junction 5	A1139 Southbound Off-slip	236	236	236	5	3	4	29	22	23	D	C	C
	Carr Road	67	76	75	2	0	2	86	7	25	F	A	C
	Boongate (E)	97	109	105	1	1	1	18	13	11	C	B	B
	A1139 Northbound Off-slip	292	306	505	3	1	2	8	5	5	A	A	A
	Boongate (W)	280	195	269	3	1	3	10	8	14	B	A	B
Boongate / Fengate	Boongate	86	75	101	1	1	2	21	26	25	C	C	C
	Fengate (E)	127	130	129	1	2	2	15	19	19	B	B	B
	Fengate (W)	101	131	103	2	3	2	35	32	25	D	C	C

Package 1

5.7.2 Package 1 improves or maintains the LOS rating at sixteen of the junction approaches in the AM Peak Hour. It decreases the LOS rating at six of the approaches.

5.7.3 Package 1 does not improve the performance of the approaches to Junction 38. Vineyard Road and Bishop's Road (East) maintain an LOS of F, whilst Bishop's Road (West) decreases to a LOS rating of C from a B in the DM scenario. This suggests the increased demand on Bishop's Road (East) approach may be reducing the available gaps for traffic on Bishop's Road (West).

5.7.4 The new northbound off-slip from A1139 Frank Perkins Parkway to Bishop's Road significantly increases the flow on the Bishop's Road (East) approach (71 vehicles). Vehicles are now using this junction to access to City Centre rather than Junction 5. The Vineyard Road approach to the junction, has less vehicle demand on its approach as a result of Package 1, but sees a significant increase in Queue Delay (354 seconds per vehicle compared to 80 seconds per vehicle in the DM scenario).

5.7.5 Package 1 has a positive impact on all approaches to Junction 5. The LOS is improved in four out of five approaches. This is to be expected as vehicles travelling northbound on the A1139 Frank Perkins Parkway wishing to access the City Centre have the option to use the new northbound off-slip. Carr Road sees a significant reduction in queue delay, decreasing from 86 seconds per vehicle in the DM scenario to 7 seconds in Package 1. This is likely to be a consequence of the introduction of traffic signals on the A1139 Frank Perkins Parkway southbound off-slip, providing more opportunity to enter the circulatory from Carr Road. All other approaches experience a reduction in the queue delay of between 2 and 7 seconds per vehicle.

5.7.6 The performance of some approaches to Junction 39 decline with the implementation of Package 1. The LOS rating of Boongate and St John's Street decreases to a C which still suggests these approaches are still operating effectively. Eastfield Road approach to the junction has an LOS rating of F (compared to a E in the DM Scenario), this may be a result of traffic signals being implemented at the junction.

5.7.7 The St John's Street / Wellington Street Junction experiences a decrease in LOS from C to F on the Wellington Street approach. This is a result of the increased traffic on Wellington Street exiting the Car Park and also higher vehicle flows travelling northbound on St John's Street reducing the available gaps for traffic to turn out of Wellington Street.

5.7.8 The Boongate / Fengate junction maintains its LOS on both the Boongate and Fengate (East) approaches. However, Fengate (West) sees an improvement to its LOS rating from a D to a C. The Fengate (West) arm experiences an increase in vehicle flow of 30 vehicles in Package 1 compared to the DM scenario.

5.7.9 This is due to an increased number of vehicles using the new northbound off-slip to access to Fengate area or the improved efficiency of Junction 5 resulting in vehicles using this route to access the Parkway Network. The impact on Mean Queue Length and Queue Delay at the junction is marginal suggesting that the proposed improvement enables the junction to operate efficiently.

Package 2

5.7.10 In the AM Peak hour, Package 2 improves or maintains the LOS rating all but three of the approaches to junctions across the study area.

5.7.11 As a result of the change in car parking assumptions, with the Embankment Area car parking to be located at Wellington Street, the key routes in Package 2 are Junction 5, Boongate and Junction 39.

5.7.12 Package 2 significantly increases the flow on the A1139 Frank Perkins Parkway northbound off-slip, from 202 vehicles in the DM Scenario to 505 vehicles. Package 2 improves or maintains the LOS for all approaches to Junction 5, and despite increases in vehicle flow on three out of five approaches, there is a negligible change in both the mean queue length and queue delay. This suggests that the proposed signalisation of both the northbound and southbound off-slips enables the junction to process more vehicles more effectively.

5.7.13 Junction 39 experiences an increase of 121 vehicles on the Boongate approach in the AM Peak Hour, although this has little impact on the mean queue length and queue delay of this approach. This suggests the proposed improvements at Junction 39 are improving the operational efficiency of the junction. More traffic is able to pass through the junction and the junction is operating more efficiently. The Eastfield Road approach to the junction has an LOS rating of F (compared to a E in the DM Scenario), this may be a result of traffic signals being implemented at the junction and competing flows on other approaches.

5.7.14 The St John's Street / Wellington Street junction experiences a decrease in LOS rating on the Wellington Street approach. In the DM scenario, the LOS is C, in Package 2 it is rated as a E, which suggests it is operating at capacity. This worsening performance is also supported by the queue delay increasing by 23 seconds per vehicle on the Wellington Street approach. This is likely to be due to the increased demand on Wellington Street from vehicles exiting the car park and increasing difficulty for vehicles to exit the junction due to flows on St John's Steet increasing.

5.7.15 Package 2 results in a small increase in flow at Junction 38. However, the queue delay on all approaches reduces. The biggest reduction is seen on the Vineyard Road approach with an 18 seconds per vehicle reduction, however the LOS is maintained at an F suggesting this junction is still struggling with the demand even with the proposed improvement.

5.7.16 The Boongate /Fengate junction experiences an increase on flow on all junctions, especially on Boongate, with an increase of 15 vehicles in the AM Peak Hour. This is likely to be as a result of an improved Junction 5 being a more attractive route in to Fengate. The LOS at the junction is maintained on all approaches.

PM Peak

5.7.17 Table 5.4 shows the performance on each junction by approach for the PM Peak Hour for both Package 1 and Package 2.

5.7.18 The cell is highlighted in green where the LOS is maintained or improved compared to the DM, and red where there has been a reduction in the LOS. Where both the DM and DS scenarios have a LOS F, the cell has been coloured on the level of delay (number of seconds) with green showing an improvement and red showing a reduction in performance.

Table 5.4: Level of Service for Approaches to Junctions in Study Area – PM Peak Hour

Junction	Approach	Flow			Mean Queue Length (m)			Queue Delay (secs /veh)			Level of Service (LOS)		
		DM	P1	P2	DM	P1	P2	DM	P1	P2	DM	P1	P2
Junction 37	A15 Bourges Boulevard	293	273	300	3	3	2	15	16	12	C	C	B
	Bishop's Road	260	208	276	2	2	2	13	12	14	B	B	B
	A15 London Road	352	337	352	2	2	1	6	6	5	A	A	A
Junction 38	Vineyard Road	155	72	167	21	32	17	167	424	124	F	F	F
	Bishop's Road (E)	122	203	133	4	8	4	46	62	44	E	F	E
	Bishop's Road (W)	257	231	255	2	4	1	14	23	4	B	C	A
St John's Street / Wellington Street	St John's Street (N)	156	76	156	0	0	0	0	0	0	A	A	A
	Wellington Street	74	94	76	1	9	1	15	106	15	B	F	B
	St John's Street (S)	215	265	230	0	0	0	0	0	0	A	A	A
Junction 39	Eastfield Road	117	45	117	13	173	12	115	96	117	F	F	F
	Boongate	320	135	349	2	25	2	7	28	11	A	C	B
	St John's Street	254	316	242	2	51	2	13	14	10	B	B	B
	New Road	58	58	59	2	28	1	53	14	28	F	B	D
	Crawthorne Road	128	96	130	10	121	1	101	38	19	F	D	B
Junction 5	A1139 Southbound Off-slip	98	99	98	1	1	1	10	16	17	A	B	B
	Carr Road	71	131	125	17	1	4	211	15	43	F	C	E
	Boongate (E)	91	99	92	2	2	2	31	41	37	D	E	E
	A1139 Northbound Off-slip	252	116	254	0	0	1	2	2	8	A	A	A
	Boongate (W)	374	285	362	3	1	7	16	9	22	C	A	C
Boongate / Fengate	Boongate	98	64	96	1	1	0	19	26	25	B	C	C
	Fengate (E)	99	123	123	2	2	1	23	21	21	C	C	C
	Fengate (W)	126	149	128	4	5	0	37	43	33	D	D	C

Package 1

5.7.19 Package 1 improves or maintains the LOS rating at thirteen of the junction approaches in the PM Peak Hour. It decreases the LOS rating at nine of the approaches.

5.7.20 Junction 38 is operating over-capacity in the PM Peak Hour, with two of its approaches having a LOS rating of F. Bishop's Road (East) experiences a significant increase in vehicle flow with 81 additional vehicles. This is increase is probably due to an increased demand from vehicles using the northbound off-slip to access the City Centre. Vineyard Road experiences significant delays with a queue delay of 424 seconds per vehicle compared to 127 seconds per vehicle in the DM Scenario.

5.7.21 Package 1 increases the flow on Wellington Street by 20 vehicles and St John's Street (South) by 50 vehicles. This has a corresponding impact on the queue delay on Wellington Street, with a delay of 106 seconds per vehicle compared to 15 seconds per vehicle in the DM Scenario. Wellington Street has a LOS of F indicating the approach is operating over-capacity. The delay is likely to be caused by an increased demand on Wellington Street from vehicles exiting the car park and higher flows on the St John's Street (South) approach resulting in limited opportunities for vehicles to exit Wellington Street.

5.7.22 Package 1 improves or maintains the LOS on all approaches to Junction 39 except Boongate, where the LOS rating reduces from an A to a C. However, Eastfield Road maintains its LOS of F with an increase in mean queue length of 160m. The Crawthorne Road approach experiences significant increases in mean queue length (111m), however queue delay is less than the DM Scenario. This suggests that the implementation of traffic signals might be causing longer queues, but it is clearing them more effectively.

5.7.23 The introduction of traffic signals on the Junction 5 southbound off-slip significantly improves the queue delay on Carr Road. In the DM Scenario the queue delay is 211 seconds, decreasing to 15 seconds in Package 1. This is likely to be the result of increased opportunities to enter the circulatory afforded by the traffic signals.

5.7.24 As a result of the reduced delay on the Carr Road approach, the vehicle flow is increased from 71 vehicles in the DM Scenario to 131 vehicles. Boongate (East) has a reduced LOS rating of E compared to D in the Package 1 scenario suggesting it is operating at-capacity. This could be due to the increased vehicle demand from Carr Road, reducing opportunities for vehicles from Boongate (East) to enter the circulatory.

5.7.25 The Boongate / Fengate junction experiences an increase in flow on both Fengate (West) and Fengate (East) approaches with approximately a 20 vehicle increase on each approach. However, all approaches have an LOS of D or above indicating the junction is operating efficiently.

Package 2

5.7.26 Package 2 improves or maintains the LOS rating at all but four of the approaches to junctions across the study area in the PM Peak Hour.

5.7.27 Package 2 maintains or improves the LOS on the approaches at Junction 38, however it is still operating over-capacity with two approaches having a LOS of E or F. There are marginal increases in traffic flows on the Vineyard Road and Bishop's Road (East) approaches, however the mean queue length and the queue delay are less than the DM Scenario, which suggests the improvement is enhancing the performance of the junction.

5.7.28 The operation of St John's Street / Wellington Street junction is similar to that of the DM Scenario in the PM Peak hour. There are marginal differences in flows, mean queue lengths and queue delay.

5.7.29 The operation of Junction 39 is improved with the implementation of Package 2. Four of the five approaches to the junction improve or maintain their LOS rating. The Boongate approach experiences an increase in vehicle flow compared to the DM Scenario (29 vehicles), however the mean queue length and queue delay have marginal differences which indicates that the proposed improvement is enabling the junction to process more traffic more efficiently. This is further supported by the decrease in queue delay on Crawthorne Road (101 seconds per vehicle to 19 seconds per vehicle) and New Road (53 seconds per vehicle to 28 seconds per vehicles. Eastfield Road maintains its LOS of F.

5.7.30 The introduction of traffic signals on both the northbound and southbound off-slip at Junction 5 significantly improves the operation of the Carr Road approach to the junction. In the DM Scenario the queue delay is 211 seconds, reduced to 43 seconds in Package 2. As discussed previously, the introduction of the traffic signal has provided more opportunities for vehicles on this approach to enter the circulatory. Boongate (East) has a reduced LOS rating of E compared to D in the DM Scenario. This could be due to an increased flow from Carr Road, reducing opportunities for vehicles from Boongate (East) to enter the circulatory.

5.7.31 The LOS on all approaches to the Boongate / Fengate junction are all a C. There is a moderate increase in vehicle flow on Fengate (East) of 24 vehicles however there is a negligible impact on mean queue length and queue delay. This suggests the proposed improvements enable the junction to operate effectively.

5.8 Football Stadium Sensitivity Test

5.8.1 The Council formally entered discussions regarding the relocation of the Peterborough United Football Stadium to the Embankment, from its current sire on London Road, shortly before finalisation of the SOBC.

5.8.2 To date, there has been no confirmation as to whether the stadium will relocate. However, if the relocation of the stadium were to occur, it will significantly impact the highway network across the study area.

5.8.3 The Football Stadium Sensitivity test has been undertaken to demonstrate how each Package performs should the Football Stadium relocate to the Embankment.

Sensitivity Test Assumptions

5.8.4 For the purposes of this sensitivity test, the worst-case scenario is assumed to be a football match event beginning at the end of the PM Peak Hour on a weekday. The following assumptions have been made in the sensitivity test:

- Total number of supporters visiting the Stadium is estimated to be 14,000
- 25% of football supporters (home and away) will travel to each home game by car (based on Coventry's Ricoh Arena Travel Plan)
- 3,500 inbound car trips for an evening weekday game (25% of 14,000).

5.8.5 These assumptions have been taken from, and are consistent with, the Fletton Quays Footbridge Strategic Outline Business Case which was produced in October 2021.

5.8.6 With regards to Car Parking for these additional vehicles, it is assumed that most car parks within the study area will be mostly empty during the PM Peak. Therefore, the following proportions in Table 5.5 have been assumed for each car park for accommodating supporter car trips.

Table 5.5: Car Parking Assumptions for Football Stadium

Car Park	Proportion of Trips	Number of Trips
Pleasure Fair	9%	315
Key Theatre	2%	70
Bishop's Road	6%	210
Wellington Street	42%	1,470
East Station Road	11%	85
Sub Total (Internal Car Park Trips)	**70%**	**2,450**
Unaccounted Trips (External Car Park Trips)	**30%**	**1,050**

5.8.7 The unaccounted trips are assumed to either park on-street or in other car parks outside of the study area. Therefore, an additional 2,450 car trips are estimated to travel into the study area in the PM Peak Hour of a weekday matchday and park inside the study area.

Model Network Statistics Summary

5.8.8 Table 5.6 below shows the Model Summary Statistics for the Football stadium Sensitivity Test. P1+ and P2+ refer to the football stadium sensitivity test.

Table 5.6: Model Network Statistics Summary

Network Statistics	P1	P1+	P2	P2+
Delay Time (s)	73	86	60	70
Flow (vehicles)	12,081	13,056	13,077	14,173
Mean Queue (m)	412	474	237	303
Total Distance Travelled (m)	5,509	5,773	6,091	6,363
Travel Time	127	141	115	126

5.8.9 Table 5.7 indicates that the model network is suffering from suppressed demand under the Football Sensitivity Testing, for both Packages. Despite an increase in trips of 2,450, the traffic flow increases by roughly 1,000 in both scenarios, indicating that many of the new trips are unable to make it into the modelled area. This suppressed demand is therefore not impacting the study area as much is it could be, should improvements be made that allow this traffic into the modelled area.

5.8.10 One example of this is the A1139 Frank Perkins Parkway. It is a known issue that the Parkway will likely be at or near capacity in future years, which directly affects how much traffic will make it to Junction 5. Improvements such as this are outside the scope of this study but may have an effect on this study area later on should they occur.

5.8.11 Table 5.7 shows that for Package 1, the average delay time per vehicle increases by 13 seconds (equivalent to an 18% increase) when the football traffic is applied. For Package 2, this average delay per vehicle increases by 9 seconds (equivalent to a 15% increase). These statistics show that the additional traffic associated with the football stadium has a significant impact on average delay to vehicles across the whole network, although Package 2 copes slightly better than Package 1.

5.8.12 Overall model network statistics indicate that Package 2 can cope slightly better with the additional traffic than Package 1, however the average delay per vehicle is still a significant increase.

5.8.13 As more certainty about the relocation of the Football Stadium comes forward, as well as the design of the preferred package progresses. Further assessments on the impact will be undertaken.

Model Results

5.8.14 Table 5.6 shows the LOS for approaches to all junctions in the PM Peak Hour. P1 and P2 refer to the scenarios discussed previously in this chapter. P1+ and P2+ refer to the football stadium sensitivity test.

5.8.15 Approaches where the LOS is E or F are highlighted red to show where capacity issues on the network are occurring.

Table 5.6: Level of Service for Approaches to Junctions in Study Area – PM Peak Hour (Football Stadium Sensititivity Test)

Junction	Approach	Flow				Mean Queue Length (m)				Queue Delay (secs /veh)				Level of Service (LOS)			
		P1	P1 +	P2	P2+	P1	P1 +	P2	P2+	P1	P1 +	P2	P2+	P1	P1 +	P2	P2+
Junction 37	A15 Bourges Boulevard	293	304	300	342	3	4	2	3	16	18	12	14	C	C	B	B
	Bishop's Road	260	210	276	267	2	2	2	3	12	14	14	17	B	B	B	C
	A15 London Road	352	367	352	379	2	2	1	2	6	6	5	6	A	A	A	A
Junction 38	Vineyard Road	155	80	167	198	32	32	17	14	424	436	124	105	F	F	F	F
	Bishop's Road (E)	122	215	133	124	8	10	4	6	62	67	44	53	F	F	E	F
	Bishop's Road (W)	257	262	255	277	4	3	1	1	23	19	4	4	C	C	A	A
St John's Street / Wellington Street	St John's Street (N)	156	94	156	233	0	0	0	0	0	0	0	0	A	A	A	A
	Wellington Street	74	85	76	55	9	10	1	4	106	121	15	42	F	F	B	E
	St John's Street (S)	215	288	230	240	0	0	0	0	0	0	0	0	A	A	A	A
Junction 39	Eastfield Road	117	37	117	93	173	173	12	14	96	112	117	138	F	F	F	F
	Boongate	320	157	349	371	25	25	2	2	28	27	11	11	C	C	B	B
	St John's Street	254	303	242	204	51	51	2	1	14	13	10	10	B	B	B	B
	New Road	58	59	59	65	28	31	1	1	14	20	28	23	B	C	D	C
	Crawthorne Road	128	68	130	173	121	125	1	5	38	57	19	34	D	E	B	C
Junction 5	A1139 Southbound Off-slip	98	163	98	162	1	1	1	2	16	15	17	17	B	B	B	B
	Carr Road	71	129	125	114	1	1	4	8	15	13	43	61	C	B	E	F
	Boongate (E)	91	108	92	101	2	2	2	3	41	42	37	47	E	E	E	E
	A1139 Northbound Off-slip	252	179	254	349	0	1	1	2	2	4	8	8	A	A	A	A
	Boongate (W)	374	245	362	334	1	1	7	3	9	8	22	16	A	A	C	C
Boongate / Fengate	Boongate	98	68	96	94	1	1	0	0	26	26	25	25	C	C	C	C
	Fengate (E)	99	130	123	136	2	2	1	4	21	21	21	21	C	C	C	C
	Fengate (W)	126	148	128	126	5	5	0	0	43	41	33	31	D	D	C	C

5.8.16 The addition of the Football Stadium may appear to make little impact to the operational performance of the junctions across the study area. However, as much of the demand appears to be suppressed (as suggested by the model summary statistics), these results should be treated with caution.

Package 1

5.8.17 Junction 38 continues to suffer significant delays on the Vineyard Road approach, with a 12 seconds per vehicle increase in queue delay. The LOS of F is maintained on both Vineyard Road and Bishop's Road (East). Bishop's Road (East) has increase 93 vehicles on its approach. This is likely to reflect the increase demand from vehicles using the new off-slip to access the city centre car parks.

5.8.18 The Wellington Street approach to the St John's Street / Wellington Street Junction maintains its LOS of F with queue delay increasing by 15 seconds per vehicle.

5.8.19 Junction 39 continues to operate effectively on the majority of approaches. Eastfield Road maintains its LOS of F and experiences an increase in queue delay of 16 seconds per vehicle even though flow is significantly reduced. Similarly, the LOS for Crawthorne Road decreases from D to E but traffic flow is significantly reduced.

5.8.20 The addition of the football traffic increases the flow on the Junction 5 southbound off-slip by 65 vehicles, however there no corresponding impact to mean max queue and queue delay suggesting the proposed improvements to the junction can accommodate the additional demand. All the other approaches maintain their LOS. Boongate (East) continues to operate at capacity, this is a result of reduced opportunities to enter the circulatory, as discussed previously.

5.8.21 The additional traffic associated with the Football Stadium, increased flow on both Fengate (East) and Fengate (West) approaches to the Boongate / Fengate junction. However, there is minimal impact on mean max queue and queue delay, suggesting the proposed improvements at the junction enable it to operate effectively with the additional demand.

Package 2

5.8.22 The football stadium traffic places additional demand on the Vineyard Road approach and Bishop's Road (West) approach to Junction 38. This is likely to reflect the increase demand from vehicles accessing the city centre car parks. Vineyard Road continues to suffer significant delays, although it is reduced by 19 seconds per vehicle. The LOS of F is maintained on both Vineyard Road and the LOS Bishop's Road (East) decreases from LOS E to LOS F.

5.8.23 The St John's Street / Wellington Street Junction experiences a significant increase in flow on the St John's Road (North) approach (77 vehicles), this is a result of vehicles travelling though the city centre to access car parking. The Wellington Street approach to the junction experiences a decrease in flow, however the LOS decreases from LOS B to LOS E.

5.8.24 Junction 39 continues to operate effectively on the majority of approaches with a LOS of B or C on four out of five approaches. However, Eastfield Road maintains its LOS of F and experiences an increase in queue delay of 21 seconds per vehicle even though flow is significantly slightly.

5.8.25 The Junction 5 northbound off-slip has a 94 vehicle increase in flow, and the southbound off-slip experiences a 64 vehicle increase. This reflects increased demand for vehicles arriving to the city centre. However there no corresponding impact to mean max queue and queue delay on these approaches suggesting the proposed improvements can accommodate the additional demand. Carr Road and Boongate (East) have a LOS of F and E respectively. This is as a result of less opportunities to enter the circulatory due to increased demand from the A1139 Frank Perkins Parkway off-slips.

5.8.26 The approaches to the Boongate / Fengate junction do not experience significant changes to flow, mean max queue or queue delay. This maybe as a result of traffic using Boongate, Junction 39 and Vineyard Road to access City Centre car parks rather than this junction.

5.9 Summary

5.9.1 The Operational Assessment has shown that Package 2 performs better than Package 1 based on the Model Summary Statistics, Subpath analysis and LOS results.

5.9.2 Bishop's Road is a low-capacity road with residential properties along its northern edge. The additional demand on Bishop's Road in Package 1 causes gridlock on the adjacent highway network with vehicles travelling westbound on Bishop's Road and Fengate, and northbound on Vineyard Road experiencing severe delays. The queuing and delay on these routes causes a significant amount of traffic to re-route along Star Road to avoid these delays. Star Road already has traffic calming and any increase in vehicles on this route is likely to be unacceptable. There are limited options to increase the capacity of Bishop's Road or Vineyard Road without significantly changing the nature of the road.

5.9.3 The queuing and delay along Bishop's Road have a knock-on impact to the new northbound off-slip which also suffers from severe queues, extending back to the A1139 Frank Perkins Parkway.

5.9.4 Package 2 provides a high-quality, high-capacity direct route from the A1139 Frank Perkins Parkway to Wellington Street Car Park. Overall Package 2 operates effectively in both the AM and PM Peak Hours. The impact on queuing and delay on the approaches to the junctions in the study area is minimal with the majority maintaining or improving conditions experienced in the Do-Minimum Scenario.

5.9.5 The Football Stadium Sensitivity Test has shown that the local and wider highway network is expected to suffer from significant unmet demand should the Football stadium be introduced to the Embankment. Package 2 copes with the Stadium demand better than Package 1, but there is still a clear deterioration in performance of the package.

6. Economic Assessment

6.1 Introduction

6.1.1 This section sets out the economic assessment for Package 1 and Package 2 to provide a comparison of the value for money of each.

6.1.2 The scheme appraisal focuses on the aspects of scheme performance that are relevant to the nature of the intervention. These impacts are not limited to those directly impacting on the economy or those which can be monetised.

6.1.3 Economic assessment undertaken to date has considered the DfT's TAG guidelines, with specific reference to the following documentation:

- TAG Unit A1.1 – Cost-benefit analysis (July 2021)
- TAG Unit A1.2 – Scheme Costs (July 2021)
- TAG Unit A1.3 – User and Provider impacts (July 2021)
- TAG Unit M3.1 – Highway Assignment Modelling (May 2020)
- TAG Unit M4 – Forecasting and Uncertainty (May 2019).

6.1.4 These units are the latest TAG Guidance released by the Department for Transport

6.2 Approach to Appraisal

6.2.1 The Economic Case for the schemes is focused on the following aspects;

- Assessing the monetised direct, localised, and economic efficiency benefits of the scheme
- Offsetting identified benefits against the scheme costs to provide a Benefit to Cost Ratio (BCR).

6.2.2 The PTM3 model has been used to test the package of options. Model outputs, along with scheme costs, have been assessed in DfT's Transport User Benefits Appraisal (TUBA version 1.9.15) tool to calculate a package Benefit to Cost Ratio (BCR).

6.2.3 The SATURN-based highway model includes forecast years of 2026, 2031, and 2036, which have been used to appraise impacts of the core scenario. These modelled forecast years have been used in the current TUBA economic appraisal.

6.2.4 Travel demands are consistent between the Do Minimum and Do Something scenarios, for each forecast year. The model demonstrates that the packages of schemes will reduce congestion, leading to less delay and travel time.

6.2.5 Full details relating to the calibration and validation of the model can be found in the Local Model Validation Report (LMVR). Details about the forecasting procedure can be found in the Forecasting Report, but it should be noted that the latest forecasts in relation to the University differ from those in the original PTM3 forecasting report due to recent changes to planning assumptions. This assessment is based on the most recent information.

6.2.6 The model output files were then entered into TUBA software to undertake the Economic Assessment and calculate a BCR. The annualisation factors shown in Table 6.1 below were specified within TUBA to calculate the likely annual transport user benefits for the AM, Inter, and PM peak hours and have been derived from nearby Highways England WebTRIS data. It was found that the 16:00 – 17:00 hour flows closely resembled the total flows observed within the PM peak hour. AM, PM and Inter-peak annualisation factors have therefore been calculated that convert the single peak hour demand to annual peak period demand.

Table 6.1 Annualisation Factors

Time Slice	Duration (min)	Annualisation Factor	Period	Description
1	60	245	1	Convert from 08:00 – 09:00 to annual 08:00 – 09:00 period
2	60	525	2	Convert from 17:00 – 18:00 to annual 16:00 – 18:00 period
3	60	1,518	3	Convert from 14:00 – 15:00 to annual 10:00 – 16:00 period

6.2.7 A proportionate approach focused on transport user benefits (Transport Economic efficiency; TEE) has been undertaken to demonstrate value for money from the preferred package of schemes.

6.2.8 The Economic Assessment has been undertaken for a 60-year assessment period (2021 to 2080).

6.3 Economic Assessment: Package 1

Present Value Costs

6.3.1 A scheme cost estimate has been produced for Package 1. The Base Investment Cost and Risk Adjusted Base Investment costs are detailed in Table 6.2 below. The cost is the capital cost in current year (2021) prices required to construct the scheme. A risk allowance has been applied on a scheme-by-scheme basis and varies between 16% and 24% (with 10% allowed applied to further design and business case development work). Adjustment to 2010 Market Prices has been and 3.72% inflation has also been applied.

Table 6.2 Package 1 Risk Adjusted Base Cost (2021 prices)

Package 1	Scheme / Component	Base Investment Cost (No Risk)	Risk Allowance	Risk Adjusted Base Cost
1.1	New A1139 NB Off-slip onto Bishops Road (Junction 4a)	£ 5,023,589	£ 1,186,335	£ 6,209,924
1.2	Junction 38 Improvements	£ 456,909	£ 75,861	£ 532,770
1.3	Fengate / Boongate Junction Improvements	£ 771,849	£ 140,768	£ 912,618
1.4	Junction 5 Improvements	£ 676,189	£ 134,321	£ 810,510
1.6	Wellington Street Improvements	£ 455,992	£ 74,136	£ 530,128
1.7	Junction 39 Improvements	£ 679,948	£ 146,720	£ 826,669
1.8	Sustainable Transport Improvements	£ 1,318,559	£ 263,712	£ 1,582,271
OBC	(Modelling, Business Case, Consultation, Stakeholder Engagement)	£ 200,000	£ 20,000	£ 220,000
FBC	(Modelling, Business Case, Consultation, Stakeholder Engagement)	£ 160,000	£ 16,000	£ 176,000
Total		**£ 9,743,036**	**£ 2,057,854**	**£ 11,800,890**

6.3.2 Optimism Bias has also been applied to the Risk Adjusted Base Cost for the construction of each scheme using a rate of 46% for roads and active travel improvements and 55% for structures in line with TAG unit A1.2 (July 2021)

6.3.3 The Economic Assessment has been undertaken for a 60-year assessment period (2021 to 2080).

6.3.4 An allowance of £100,000 has also been included for land purchase, relating to the Boongate / Fengate junction scheme. Any sunk costs have been excluded from the assessment.

6.3.5 A cost allowance has also been included for Sustainable Transport Improvements in the area. The benefits of these schemes are not included in the economic assessment at this stage and are expected to improve the package BCRs when incorporated as part of the Outline Business Case.

6.3.6 Note that the costs of Package 1 have increased since the SOBC as further survey and design work have identified higher construction costs associated with each of the schemes, including the requirement for an underpass beneath the new slip road.

Present Value Benefits

6.3.7 The transport benefits of the scheme were assessed using the SATURN-based PTM3 (built in v11.4.07H).

6.3.8 The difference between the DM and DS scenarios demonstrates the benefits of implementing the scheme. These benefits are measured using:

- Network assignment statistics
- Link flow changes
- Journey times
- Journey routing

6.3.9 The model output files were then entered into the TUBA software to undertake the Economic Assessment and calculate a BCR.

6.3.10 TUBA produces figures for a number of benefits, including Greenhouse Gases User benefits, and Indirect Taxation. Indirect Taxation often provides a negative benefit figure. This is a result of the reduced fuel being purchased as journeys become more efficient with the improvements. This in turn reduces the money the government receives in taxes.

6.3.11 This identifies the Present Value Benefits (PVB) to be **£3,729,000.** A breakdown of these benefits are shown in Table 6.3 beneath.

Benefit Cost Ratio

6.3.12 The Benefit Cost Ratio (BCR) is the ratio of PVB to PVC. Table 6.3 beneath summarises the BCR for the preferred scheme as calculated using TUBA.

Table 6.3 Package 1 Analysis of Monetised Costs and Benefits (AMCB)

Value (£,000s) 2010 prices, benefits discounted to 2010	
Benefits	
Greenhouse Gases	423
Consumer Users (Commuting)	-247
Consumer Users (Other)	4,054
Business Users/Providers	279
Indirect Taxes	-780
Present Value of Benefits (PVB)	3,729
Costs	
Broad Transport Budget	10,149
Present Value of Costs (PVC)	10,149
Net Benefit / BCR Impact	
Net Present Value (NPV)	-6,420
Benefit / Cost Ratio (BCR)	**0.367**

6.3.13 The DfT uses the following thresholds to determine the Value for Money statement associated with a BCR:

- Very Poor Value for Money if BCR = < 0.0
- Poor Value for Money if BCR = 0.0 to 1.0
- Low Value for Money if BCR = 1.0 to 1.5
- Medium Value for Money if BCR = 1.5 to 2.0
- High Value for Money if BCR = 2.0 to 4.0
- Very High Value for Money if BCR > 4.0

6.3.14 Based on transport user benefits alone, this scheme will provide **Poor Value for Money**.

6.3.15 The BCR reported for this Package in the SOBC was 5.223. The BCR is now significantly lower for two reasons, the first of which is the increase in the scheme cost estimate based on more recent and thorough design work, and the second is a significant change in the University Planning assumptions, which has reallocated the University parking from the Embankment Area to Wellington Street. This has significantly degraded the Package 1 BCR as many of the benefits associated with the new slip road delivering high volumes of traffic close to the parking are lost, and vehicles using the slip road now need to pass through the busy City Centre to reach the new parking destination.

6.4 Spread of Benefits

6.4.1 The TUBA results include a detailed breakdown of the scheme benefits including (but not limited to) benefits by time saving and benefits by distance. These benefits are broken down by vehicle type and journey purpose to better understand how different user types will benefit from the scheme. Table 6.4 below shows the time benefits saving by vehicle type.

Table 6.4: Package 1 Non-Monetised Time Benefits by Time Saving

Non-Monetised Time Benefits By Time Saving							
Time benefits (thousands of person hrs) by size of time saving							
Vehicle Type	Purpose	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	>5 mins
Car	Business	0	-18	-1241	1083	270	0
Car	Commuting	0	-85	-2812	2190	554	0
Car	Other	2	-205	-17404	15988	2968	2
LGV Freight	Business	0	-72	-1867	1525	487	3
LGV Freight	Commuting	0	0	0	0	0	0
LGV Freight	Other	0	0	0	0	0	0
OGV1	Business	-4	-27	-867	599	102	10
OGV1	Commuting	0	0	0	0	0	0
OGV1	Other	0	0	0	0	0	0

6.4.2 Table 6.4 shows that car users experience the greatest time benefit from the implementation of Package 1. Within the car users, the 'other' journey purpose experiences the greatest impact, which is correlates with the composition of trip types across the model.

6.4.3 Table 6.5 below shows the journey time benefits by distance.

Table 6.5: Package 1 Non-Monetised Time Benefits by Distance

Non-Monetised Time Benefits By Distance									
Time benefits (thousands of person hrs) by distance									
Vehicle Type	Purpose	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	-2	220	74	-114	-36	-22	-19	-8
Car	Commuting	-10	312	150	-429	-89	-61	-16	-11
Car	Other	28	3548	-20	-1413	-238	60	-387	-231
LGV Freight	Business	-2	178	176	-189	-38	6	-30	-26
LGV Freight	Commuting	0	0	0	0	0	0	0	0
LGV Freight	Other	0	0	0	0	0	0	0	0
OGV1	Business	0	14	35	10	-29	-55	-122	-41
OGV1	Commuting	0	0	0	0	0	0	0	0
OGV1	Other	0	0	0	0	0	0	0	0

6.4.4 The table shows that those making trips of between 1km - 5kms benefit most from the proposed package. As with the time savings, car users experience the greatest level of benefit, and these apply mostly to those who travel for 'other' purposes.

6.5 Economic Assessment: Package 2

Present Value Costs

6.5.1 A scheme cost estimate has been produced for Package 2, following the same method as Package 1 above. The costs Based Investment Cost and Risk Adjusted Base Investment costs are detailed in Table 6.6 below.

Table 6.6 Package 2 Risk Adjusted Base Cost (2021 prices)

Package 2	Scheme / Component	Base Investment Cost (No Risk)	Risk Allowance	Risk Adjusted Base Cost
2.1	Boongate Dualling	£ 9,147,086	£ 2,171,251	£ 11,318,337
2.2	Junction 38 Improvements	£ 447,375	£ 75,861	£ 523,237
2.3	Fengate / Boongate Junction Improvements	£ 759,484	£ 140,768	£ 900,252
2.4	Junction 5 Improvements	£ 661,275	£ 134,321	£ 795,596
2.6	Wellington Street Improvements	£ 444,854	£ 74,136	£ 518,990
2.7	Junction 39 Improvements	£ 668,810	£ 146,720	£ 815,530
2.8	Sustainable Transport Improvements	£ 1,302,886	£ 263,712	£ 1,566,598
OBC	(Modelling, Business Case, Consultation, Stakeholder Engagement)	£ 200,000	£ 20,000	£ 220,000
FBC	Full Business Case	£ 160,000	£ 16,000	£ 176,000
Total		**£ 13,791,770**	**£ 3,042,770**	**£ 16,834,539**

6.5.2 Again, a risk allowance has been applied on a scheme-by-scheme basis and varies between 16% and 24% (with 10% allowed applied to further design and business case development work).

6.5.3 Optimism Bias has also been applied to the Risk Adjusted Base Cost for the construction of each scheme using a rate of 46% for roads and active travel improvements and 55% for structures in line with TAG unit A1.2 (July 2021).

6.5.4 An allowance of £100,000 has also been included for land purchase, relating to the Boongate / Fengate junction scheme. Any sunk costs have been excluded from the assessment.

6.5.5 A cost allowance has also been included for Sustainable Transport Improvements in the area. The benefits of these schemes are not included in the economic assessment at this stage and are expected to improve the package BCRs when incorporated as part of the Outline Business Case.

Present Value Benefits

6.5.6 Following the same method as Package 1 above, the Present Value Benefits (PVB) for this package has been identified as **£34,742,000.** A breakdown of these benefits is shown in Table 6.7 beneath.

Benefit Cost Ratio

6.5.7 The Benefit Cost Ratio (BCR) is the ratio of PVB to PVC. TABLE beneath summarises the BCR for the preferred scheme as calculated using TUBA.

Table 6.7 Package 2 Analysis of Monetised Costs and Benefits (AMCB)

Value (£,000s) 2010 prices, benefits discounted to 2010	
Benefits	
Greenhouse Gases	412
Consumer Users (Commuting)	7,656
Consumer Users (Other)	18,909
Business Users/Providers	8,578
Indirect Taxes	-813
Present Value of Benefits (PVB)	34,742
Costs	
Broad Transport Budget	14,409
Present Value of Costs (PVC)	14,409
Net Benefit / BCR Impact	
Net Present Value (NPV)	20,333
Benefit / Cost Ratio (BCR)	**2.411**

6.5.8 The DfT uses the following thresholds to determine the Value for Money statement associated with a BCR:

- Very Poor Value for Money if BCR = < 0.0
- Poor Value for Money if BCR = 0.0 to 1.0
- Low Value for Money if BCR = 1.0 to 1.5
- Medium Value for Money if BCR = 1.5 to 2.0
- High Value for Money if BCR = 2.0 to 4.0
- Very High Value for Money if BCR > 4.0

6.5.9 Based on transport user benefits alone, this scheme will provide **High Value for Money**.

6.5.10 This BCR represents an increase from the BCR reported in the SOBC, which was 1.574. Although the costs have remained relatively stable for Package 2 since the last stage of assessment, the change in assumption associated with the University Parking means that there is now significantly more benefit associated with dualling Boongate which provides a high-capacity link from the City Centre directly to Wellington Street and much of the Embankment Area parking provision.

6.6 Spread of Benefits

6.6.1 The TUBA results include a detailed breakdown of the scheme benefits including (but not limited to) benefits by time saving and benefits by distance. These benefits are broken down by vehicle type and journey purpose to better understand how different user types will benefit from the scheme. Table 6.8 below shows the time benefits saving by vehicle type.

Table 6.8: Package 2 Non-Monetised Time Benefits by Time Saving

Non-Monetised Time Benefits By Time Saving							
Time benefits (thousands of person hrs) by size of time saving							
Vehicle Type	Purpose	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	>5 mins
Car	Business	0	-5	-551	1138	51	71
Car	Commuting	0	-9	-1249	2539	264	214
Car	Other	0	-44	-7830	14184	1351	1799
LGV Freight	Business	0	-19	-835	1464	114	20
LGV Freight	Commuting	0	0	0	0	0	0
LGV Freight	Other	0	0	0	0	0	0
OGV1	Business	-2	-12	-405	526	27	11
OGV1	Commuting	0	0	0	0	0	0
OGV1	Other	0	0	0	0	0	0

6.6.2 Table 6.8 shows that car users experience the greatest time benefit from the implementation of Package 1. Within the car users, the 'other' journey purpose experiences the greatest impact, which is correlates with the composition of trip types across the model.

6.6.3 Table 6.9 below shows the journey time benefits by distance.

Table 6.9: Package 2 Non-Monetised Time Benefits by Distance

Non-Monetised Time Benefits By Distance									
Time benefits (thousands of person hrs) by distance									
Vehicle Type	Purpose	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	6	244	252	136	37	30	2	-2
Car	Commuting	14	425	661	402	156	91	14	-5
Car	Other	122	3473	2202	1479	817	1156	295	-85
LGV Freight	Business	2	139	275	197	82	55	3	-7
LGV Freight	Commuting	0	0	0	0	0	0	0	0
LGV Freight	Other	0	0	0	0	0	0	0	0
OGV1	Business	0	11	50	39	24	31	4	-15
OGV1	Commuting	0	0	0	0	0	0	0	0
OGV1	Other	0	0	0	0	0	0	0	0

6.6.4 The table shows that those making trips of between 1km - 5kms benefit most from the proposed package. As with the time savings, car users experience the greatest level of benefit, and these apply mostly to those who travel for 'other' purposes.

6.7 Economic Assessment Results

6.7.1 The results of the economic assessment are compared in Table 6.10 below.

Table 6.10 Economic Assessment AMCB Comparison

Value (£,000s) 2010 prices, benefits discounted to 2010	Package 1	Package 2
Benefits		
Greenhouse Gases	423	412
Consumer Users (Commuting)	-247	7,656
Consumer Users (Other)	4,054	18,909
Business Users/Providers	279	8,578
Indirect Taxes	-780	-813
Present Value of Benefits (PVB)	3,729	34,742
Costs		
Broad Transport Budget	10,149	14,409
Present Value of Costs (PVC)	10,149	14,409
Net Benefit / BCR Impact		
Net Present Value (NPV)	-6,420	20,333
Benefit / Cost Ratio (BCR)	**0.367**	**2.411**
Value for Money Statement	Poor	High

6.7.2 As referenced above, it should be noted that in the SOBC assessment, Package 1 outperformed Package 2. This is as a result of changes to modelling assumptions, that have come about either due to design changes or new information regarding parking provision. Most significantly, the assumption that Wellington Street Car Park will accommodate many of the future trips drastically affects the benefits that Package 1 provides, whilst Package 2 is well placed to accommodate these trips. The estimated cost of Package 1 has also increased since the SOBC based on more mature design information.

6.7.3 The Economic Assessment has demonstrated that Package 2 provides a much greater Benefit to Cost Ratio than Package 1.

6.8 Mode Shift

6.8.1 The SOBC did not include any benefits arising from modal shift. The was due to the scheme being predominantly a highway improvements scheme with the objective of relieving peak-time congestion and delay at Junction 5 on the A1139 Frank Perkins Parkway, and other local routes within the study area. There are walking and cycling improvements proposed as part of the improvement scheme, however these are not expected to stimulate significant modal shift. Mode Shift benefits will be reconsidered within the OBC for the preferred Package.

7. Public Engagement

Introduction

7.1.1 In October 2020, Peterborough City Council was awarded £22.9m from the Government's Towns Fund. One of the key components of the Towns Fund is 'Riverside Development and Connections' which includes creating a masterplan for the Embankment.

7.1.2 During November 2021, the City Council undertook a public engagement exercise on four different masterplan options for the Embankment. Each option comprises different land-use scenarios.

7.1.3 The public engagement exercise included a in-person open day on the 20th November 2021 and a public webinar on the 22nd November 2021. At both events, plans of both Package 1 and Package 2 were presented.

7.1.4 General feedback on the four masterplan options was received at the two events as well as via an on-line questionnaire up until 5th December 2021.

Feedback

7.1.5 Seven comments relating to transport were received from the public engagement exercise, although the majority of feedback was not directly linked to Package 1 or Package 2, with more general comments around parking and connectivity.

7.1.6 Parking was raised in five of the seven comments, particularly with regard to the possibility of the Peterborough United Football Ground relocating to the Embankment.

7.1.7 Connectivity to the Embankment was raised in three of the seven comments.

7.1.8 The response form Peterborough Civic Society discussed Package 1 and Package 2 and stated that a '*slip road from the northbound Frank Perkins Parkway to Bishops Road would bring large volumes of traffic to an already congested area with no significant parking available for them*'. They also identified that the *'slip road could be used by motorists trying to access the city centre via what is perceived to be a short cut, so bringing a lot more congestion to Bishops Road'*.

7.1.9 Peterborough Civic Society perceived the *'dualling of Boongate and use of the large Wellington Street Car Park would be a more practical solution but some would find the 800m walk to the Embankment too far*'.

Summary of Public Engagement

7.1.10 The public engagement exercise highlighted that public concerns relating to the Embankment Masterplan and transport were focussed on parking and connectivity.

7.1.11 The active travel proposals as part of both Package 1 and Package 2 will assist in improving access to and from the Embankment, particularly along Vineyard Road / St John's Street to Wellington Street Car Park.

7.1.12 The Peterborough Civic Society response made reference to each of the Packages, and stated that the dualling of Boongate (Package 2) and use of Wellington Street Car Park is a more practical solution. However, no further analysis can be undertaken on which package is preferred due to the low number of responses.

7.1.13 A further public consultation exercise will be undertaken when the pre-liminary design of the preferred Package is complete, to enable comments to be considered for the detailed design.

8. Identification of Preferred Option

8.1.1 The purpose of the Package Assessment Report is to summarise the further assessment undertaken on both packages, including a review of policy, design and construction, environment and operational and economic performance, and identify a preferred Package.

8.1.2 The University Access Study Strategic Outline Business Case (SOBC) identified two packages of schemes to add capacity to the highway network and address the existing problems of peak hour congestion and delay at key junctions within the study area. Additionally, they will help facilitate development at the Embankment Area and across the wider City Centre area.

8.1.3 The key difference between the two packages of schemes is that Package 1 provides a new northbound off-slip (Junction 4a) between A1139 Frank Perkins Parkway and Bishops Road. Package 2 includes the dualling of Boongate between Junction 5 (A1139 Frank Perkins Parkway / Boongate) and Junction 39 (Crawthorne Road / Eastfield Road / Boongate / St John's Street / New Road)

8.1.4 A preferred Package could not be determined at the SOBC stage due to ongoing planning and regeneration discussions. Concerns were raised with Package 1 and the operational performance of the highway network directly adjacent to the proposed northbound off-slip as identified in the Strategic Modelling. In addition, as the SOBC programme was drawing to a close, there were changes to a number of the planning assumptions in the study area. The changes included a significant increase in the number of students for the latter phases of the University planning application, and the possibility of the Peterborough United Football Ground relocating to the Embankment.

8.1.5 Due to the pace of developments within the study area, a more detailed assessment of the two packages across a range of areas was needed to identify a preferred option. This report documents that further assessment.

8.1.6 Each assessment is discussed in turn below.

Strategic Fit Assessment

8.1.7 The Strategic Fit Chapter set out a comparison of how well Package 1 and Package 2 fit with local policy and regenerations proposals, including the Local Transport Plan, City Centre Transport Vision and Embankment Masterplan. Package 2 demonstrated a very good strategic fit.

8.1.8 The dualling of Boongate, provided as part of Package 2, provides a high-capacity and high-quality link from the Parkway Network to the transport hub at Wellington Street (which is expected to provide parking for the future growth of the Embankment Area) and significantly reduces the number of trips on the routes around the Embankment Area.

8.1.9 Package 2 also provides the chance to redevelop the area around Junction 39, creating significant opportunities to improve walking and cycling infrastructure, as well as public transport infrastructure.

8.1.10 Given the timing of development and pace of growth on the Embankment, delivery of Package 2 would likely form the first phase of implementation of the City Centre Transport Vision.

8.1.11 Package 1 did not demonstrate a good strategic fit; the new northbound off-slip delivers high volumes of traffic on to a low-capacity part of the network with limited scope for improvement, and does not work in conjunction with a Transport Hub at Wellington Street which has been confirmed since the SOBC was produced. Package 1 did not meet the ambition of the City Centre Transport Vision or the development objectives for the Embankment Area.

Design and Construction Assessment

8.1.12 Each improvement identified in Package 1 and Package was considered in terms of design constraints and potential construction issues. The assessment concluded that there are not considered to be any insurmountable design or construction challenges associated with either package.

8.1.13 Package 1 required no third-party land to construct the new off-slip. However, the provision of the new off-slip will impact the Bishop's Road recreation area, reducing its size. Construction of the new northbound off-slip is not considered to be difficult, as much of the slip-road can be built off-line with night-time or weekend closures used for tie-ins at either end.

8.1.14 The concept design has tried to minimise the impact on the Corsican Elms through realignment of the road, with only two trees requiring removal. Four other trees (of different species) will also need to be removed on the southern side of the recreation area.

8.1.15 The land required to construct the Boongate Dualling is within the highway boundary or Community Related Asset (CRA) land which is controlled by the Council. The dualling of Boongate will impact the current turning head on Dickens Street which will require relocation Several parking spaces on Dickens Street may be lost to this relocation, as well as a portion of the tree and shrub belt, requiring complimentary landscaping works to offset the impact

8.1.16 Construction of this scheme can predominantly be undertaken off-line, with no disruption to the existing network. Consideration will need to be given on how best to minimise disruption to a key route into the City Centre from the Parkway Network, and what impacts and constraints are associated with night-time working in an urban area close to residential areas.

Environmental Assessment

8.1.17 The environmental assessment focused on the significant new pieces of infrastructure in each package: the new northbound off-slip (Junction 4a) in Package 1; and the dualling of Boongate in Package 2 to assist with determining the preferred option from an environmental perspective.

8.1.18 An environmental appraisal was completed for each of the following areas:

- Air Quality
- Archaeology and Cultural Heritage
- Landscape and Visual
- Biodiversity
- Noise and Vibration
- Water: Hydrology and Drainage
- Socio Economic and Community Impacts
- Socials and Geology

8.1.19 The overall environmental assessment of the northbound off-slip (Package 1) is Amber and for Boongate Dualling (Package 2) is Amber/Green. This is based on the assumption that appropriate mitigation would be included as part of the Scheme design and construction methodology and would be fully developed as the either scheme progresses. It is a preliminary assessment and further environmental assessments will be undertaken as the design progresses.

8.1.20 The environmental assessment identified a number of additional constraints for the northbound off-slip when compared to Boongate Dualling and present a greater risk to delivery.

8.1.21 The northbound off-slip is situated upon recreational urban green land and should be noted as a potential higher risk to the delivery of the scheme. It also has the potential to impact the setting of high value a heritage asset (Peterborough Cathedral).

8.1.22 Boongate Dualling will require removal of a favourable habitat for protected species comprising trees, tall ruderals, wildflowers, and scrub. However appropriate mitigation can be designed in to offset this.

Operational Assessment Summary

8.1.23 The Operational Assessment has shown that Package 2 performs better than Package 1 based on the Model Summary Statistics, Subpath analysis and LOS results.

8.1.24 Bishop's Road is a low-capacity road with residential properties along its northern edge. The additional demand on Bishop's Road in Package 1 causes gridlock on the adjacent highway network with vehicles travelling westbound on Bishop's Road and Fengate, and northbound on Vineyard Road experiencing severe delays. The queuing and delay on these routes causes a significant amount of traffic to re-route along Star Road to avoid these delays. Star Road already has traffic calming and any increase in vehicles on this route is likely to be unacceptable. There are limited options to increase the capacity of Bishop's Road or Vineyard Road without significantly changing the nature of the road.

8.1.25 The queuing and delay along Bishop's Road have a knock-on impact to the new northbound off-slip which also suffers from severe queues, extending back to the A1139 Frank Perkins Parkway.

8.1.26 Package 2 provides a high-quality, high-capacity direct route from the A1139 Frank Perkins Parkway to Wellington Street Car Park. Overall Package 2 operates effectively in both the AM and PM Peak Hours. The impact on queuing and delay on the approaches to the junctions in the study area is minimal with the majority maintaining or improving conditions experienced in the Do-Minimum Scenario.

8.1.27 The Football Stadium Sensitivity Test has shown that the local and wider highway network is expected to suffer from significant unmet demand should the Football stadium be introduced to the Embankment. Package 2 copes with the Stadium demand better than Package 1, but there is still a clear deterioration in performance of the package.

Economic Assessment Summary

8.1.28 An Economic Assessment was undertaken on both packages using updated cost information provided by the latest design phase and incorporating the latest assumptions from the University Planning Application.

8.1.29 The Economic Assessment has demonstrated that Package 2 provides a much greater Benefit to Cost Ratio than Package 1.

8.1.30 The results reverse the results from the assessment at SOBC, when Package 1 achieved a much higher value for money than Package 2. This is as a result of changes to modelling assumptions, that have come about either due to design changes or new information regarding parking provision. Most significantly, the assumption that Wellington Street Car Park will accommodate many of the future trips drastically affects the benefits that Package 1 provides, whilst Package 2 is well placed to accommodate these trips. The estimated cost of Package 1 has also increased since the SOBC based on more mature design information.

Identification of Preferred Option

8.1.31 Each of the assessments discussed above has identified a preferred option. Table 8.1 summarises the preferred option identified in each assessment area.

Table 8.1: Summary of Preferred Option by Assessment Area

Assessment Area	Preferred Package
Strategic Fit Assessment	Package 2
Design and Construction Assessment	No preferred package
Environmental Assessment	Package 2
Operational Assessment	Package 2
Economic Assessment	Package 2
Public Engagement	No preferred package

8.1.32 It is clear from each of the assessments undertaken, that Package 2 is the better performing option and therefore will be taken forward to Preliminary Design and Outline Business Case as the preferred option.

8.1.33 Package 2 has a strong policy fit, especially with regards to the objectives of the City Centre Transport Vision. Package 2 provides a high-capacity, high-quality link from the A1139 Frank Perkins Parkway to the transport hub at Wellington Street (which is expected to provide parking for the future growth of the Embankment Area). The operational assessment demonstrated that Package 2 provides significant improvements to junctions to accommodate the additional traffic without causing significant queueing on low-capacity roads and rat-running on routes within the study area.

8.1.34 Package 2 also creates the opportunity to drastically redevelop the area around Junction 39, creating significant opportunities to improve walking and cycling infrastructure, as well as public transport infrastructure.

8.1.35 Given the timing of development and pace of growth on the Embankment, delivery of Package 2 would likely form the first phase of implementation of the City Centre Transport Vision.

Next Steps

8.1.36 Subject to acceptance of this Package Assessment Report and its recommendation to proceed with Package 2, the next stage of scheme development is to undertake the Preliminary Design of all the schemes included within Package 2, including all supporting tasks such as site surveys, environmental assessments, and stakeholder engagement. This phase of work will then culminate with an Outline Business Case (OBC) that will be submitted to the CPCA for review and approval. The next phase of work is expected to begin in April 2022 and is expected to last until July 2023. Funding to progress the Preliminary Design and OBC needs to be secured to enable this work to progress.

Appendices

Appendix A: Concept Design Drawings

Appendix B: Environmental Assessment Report

Major Road Network (MRN) & Large Local Major (LLM) Schemes

Strategic Outline Business Case Submission

All submissions for consideration for the MRN or LLM pipelines and development funding must be supported by:

- A completed bid pro-forma (Part One).
- A checklist to highlight where key information can be found in the SOBC (Part Two).
- A Strategic Outline Business Case (SOBC) as defined in the Department's Transport Business Case Guidance and any Annexes as necessary. Please see:

  https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/85930/dft-transport-business-case.pdf

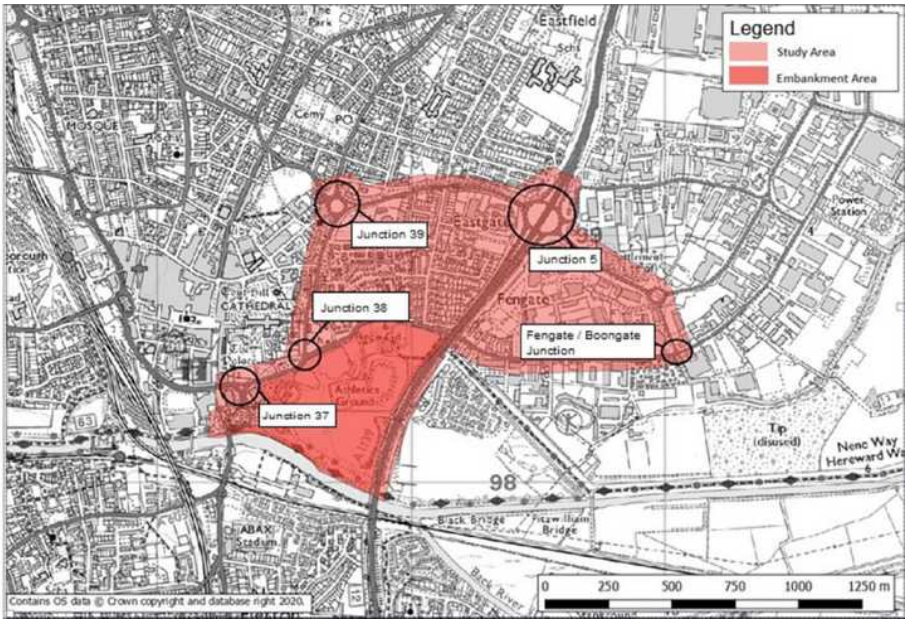
The checklist (b) details some key items that should be included within the SOBC for a candidate for MRN or LLM development funding.

The SOBC should be submitted alongside the MRN Regional Evidence Base and scheme priorities.

Proposed MRN and LLM schemes should only be road schemes as both programmes are now funded from the National Roads Fund. MRN schemes should be situated on the MRN, while LLM schemes should be for local roads which could include but are not limited to roads on the MRN. The Department's contribution will normally be between £20 million and £50 million for MRN schemes and above £50 million for LLM schemes.

Part One: Pro-forma

Basic Information

Scheme Name	A1139 University Access
STB Region / Regional Group	East of England
Promoting Authority	Cambridgeshire and Peterborough Combined Authority (CPCA)
Scheme location	Road name/number and section: 
Scheme location	Latitude and longitude:

Contact Details

Please provide a contact **name** from the promoting authority for enquiries relating to this bid:	Anna Graham
Please provide a contact **email** from the promoting authority for enquiries relating to this bid:	Anna.graham@cambridgeshirepeterborough-ca.gov.uk

Please provide a contact **phone number** from the promoting authority for enquiries relating to this bid:	07923250209

Consultancy Input

Please provide the name of any consultancy companies/lead consultants involved in the preparation of the **SOBC.**	Milestone (formerly Skanska) working on behalf of Peterborough City Council.
Please provide the name of any consultancy companies/lead consultants involved in the preparation of the **modelling** (if different from above).	As above

1) Introduction

Please provide a clear narrative to describe the scheme in the text box below (max 100 words).

The Peterborough Local Plan (adopted July 2019) sets out the overall vision, priorities and objectives for Peterborough for the period up to 2036. It includes the establishment of a University in Peterborough and is being delivered by both the Combined Authority and Peterborough City Council. The Embankment area is expected to attract significant growth in addition to the University. The SOBC focuses on the highway network near to the Embankment area, including Junction 5 of the A1139 Frank Perkins Parkway and the surrounding roads of Bishops Road, Vineyard Road, and Boongate. It also considers the southern part of Fengate. Its aim is to identify any potential need for transport improvements to support growth and the University site.

2) Development of scheme so far

Which description in the table below best matches the current stage of scheme development? Please tick only one box

We have identified the problem (e.g. the stretch of road or junction) and have a wide range of potential options but have not yet started to identify specific solutions.	
We have done some high level work to sift out some options and have a shortlist of high level options which can be described and drawn on a map. Alignments may not be precise.	
We have sifted down to a small number of options (e.g. 2 to 4) with precise alignments but have not yet settled on a preferred option.	
We have settled on a preferred option or alignment – possibly with some minor design elements left to decide (e.g. junction types).	✓

Have you produced any of the following documents (as defined in WebTAG)?

Option Appraisal Report (OAR)	Y
Appraisal Specification Report (ASR)	Y

Please provide any other information in the box below to describe what option development work has been done to date and reference with hyperlinks or attachments. In particular, illustrate why alternative/lower cost/phased options have been ruled out.
The SOBC sets out the case for transport improvements for the Embankment area and demonstrates that intervention is needed to reduce existing and future congestion and facilitate the development of the Embankment area including the University of Peterborough. A total of fourteen options were identified, with potential schemes ranging widely in estimated cost and level of effect on the operation of the area in focus of the SOBC. The DfT's Early Assessment Sifting tool (EAST) was used to assess the long list of options against project objectives, the Options Assessment Report (OAR) details the criteria used in the sift. The EAST scoring assessment is shown in Appendix B of the OAR. The EAST assessment discounted only one option as it failed to improve capacity. The remaining 13 options were taken forward to develop packages of interventions with the SATURN-based Peterborough Transportation Model 3 (PTM3). The Assessment methodology for the shortlisted options is detailed in the OAR, 4.2. Two packages were identified, each with a number of interventions, have been identified for further development. Package 1 includes the following improvements, • New Northbound off-slip linking the A1139 Frank Perkins Parkway with the Bishop's Road • 40m flare extension on the Bishop Road East (Junction 38) • Signalisation of the A1139 Frank Perkins Parkway southbound off-slip (Junction 5) • 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East (Boongate/Fengate Junction) • Creation of a roundabout at St Johns Street/Wellington Street Package 2 contains the following improvements, • Signalisation of the A1139 Frank Perkins Parkway northbound and southbound offslips, extension of the northbound off-slip left turn flare and provision of a left dedicated lane from the A1139 Frank Perkins Parkway northbound off-slip to Boongate west (Junction 5) • 40m flare extension on the Bishop Road East (Junction 38) • Dualling of Boongate West between Junction 5 and Junction 39

- 40m flare extension on Fengate West and creation of a dedicated right turn lane on Fengate East (Boongate/Fengate Junction)
- Creation of a roundabout at St Johns Street/Wellington Street

Each package was developed iteratively with different options added to address specific issues identified through the transport modelling.

Further analysis of the two packages has been undertaken in the Package Assessment Report and concluded that Package 2 performed better than Package 1, economically and operationally. This is due to changes in the modelling assumptions due to either design alterations or reflecting changes in the planning application for the University.

3) Strategic Case – Problems and Objectives

Please describe the problems the scheme is being designed to solve and how the scheme will support MRN and LLM objectives (see Strategic Case Checklist in Part B) and key national strategic priorities (e.g. access to international gateways and HS2 connections) in no more than 250 words.

The Peterborough Local Plan (adopted July 2019) sets out the overall vision, priorities and objectives for Peterborough for the period up to 2036. It includes the establishment of a University in Peterborough and is being delivered by both the Combined Authority and Peterborough City Council. The Embankment area is identified as an opportunity area by Peterborough City Council and is expected to attract significant growth in addition to the University.

The A1139 Fletton Parkway / Frank Perkins Parkway enables traffic to move strategically around the city. It is a key commercial corridor linking Norfolk, and multiple regional and local businesses, with the strategic road network. In addition, Junction 5 provides one of the key access points to Fengate, a large employment area within Peterborough. The University of Peterborough will also attract many new trips to this part of the transport network. The delivery of a scheme in this area will unlock economic development opportunities and increase the attractiveness for potential investors within Fengate and to the east of Peterborough City Centre, including the Embankment, as a reduced delays and improved journey time reliability.

A review of the pedestrian and cycleways was conducted as part of the SOBC and improvements identified for further development.

Table 2.1 in the SOBC details the alignment between the project and MRN objectives.

Please describe/explain in the box below the impact of not taking forward this scheme (max 200 words).

Significant capacity issues exist on the A1139 Frank Perkins Parkway and traffic conditions are forecast to get worse with proposed growth if no improvements are delivered. There is currently severe peak hour congestion and delay at Junction 5, with queues extending back onto the A1139 Frank Perkins Parkway in the AM peak hour. The development of the Embankment and University Site would become severely constrained if capacity improvements are not identified and implemented.

The provision of additional capacity at / or close to Junction 5, will ease congestion, improve journey time reliability, and improve the network resilience of the A1139 Frank Perkins Parkway and MRN, as well as the surrounding local road network.

4) Economic Case - Value for Money

Please summarise in the boxes below your current understanding of the likely costs and benefits of the scheme. Please include your estimate of the indicative Benefit Cost Ratio if one is available.

This should cover both monetised and non-monetised costs and benefits.

Please reference the SOBC where relevant and any reports on this to date (please provide hyperlinks or attachments).

If more than one option is still live please detail the relative costs and benefits of each, if available. In doing so, please make clear the age and source of the underlying data and any assumptions.

Value (£'000s) 2010 prices, benefits discounted to 2010	Package 1	Package 2
Benefits		
Greenhouse Gases	557	479
Consumer Users (Commuting)	7,160	8,892
Consumer Users (Other)	15,127	16,362
Business Users/Providers	10,383	12,598
Indirect Taxes	-1,082	-913
Present Value of Benefits (PVB)	**32,145**	**37,418**
Costs		
Broad Transport Budget	6,154	23,776
Present Value of Costs (PVC)	**6,154**	**23,776**
Net Benefit / BCR Impact		
Net Present Value (NPV)	**25,991**	**13,642**
Benefit/Cost Ratio (BCR)	**5.223**	**1.574**
Value for Money Statement	**Very High**	**Medium**

The Present Value of Benefits used in the assessment have been derived from the SATURN-based Peterborough Transportation Model (PTM3) used to assess the impact of the scheme in future years. Results from this modelling were then assessed using the Transport User Benefits Appraisal (TUBA,

1.9.14) tool to calculate a scheme BCR.

Since completing the SOBC a Package Assessment Report was undertaken to update the assumptions and determine a preferred package. The Table below shows the economic assessment outcome.

Value (£,000s) 2010 prices, benefits discounted to 2010	Package 1	Package 2
Benefits		
Greenhouse Gases	423	412
Consumer Users (Commuting)	-247	7,656
Consumer Users (Other)	4,054	18,909
Business Users/Providers	279	8,578
Indirect Taxes	-780	-813
Present Value of Benefits (PVB)	3,729	34,742
Costs		
Broad Transport Budget	10,149	14,409
Present Value of Costs (PVC)	10,149	14,409
Net Benefit / BCR Impact		
Net Present Value (NPV)	-6,420	20,333
Benefit / Cost Ratio (BCR)	**0.367**	**2.411**
Value for Money Statement	Poor	High

Indicative Benefit to Cost Ratio (if available)	The SOBC BCRs Package 1 BCR 5.2 Package 2 BCR 1.6 Package Assessment Report BCRs Package 1 BCR 0.4 Package 2 BCR 2.4
Indicative value for money category	The SOBC Value for Money Statement is, Package 1 Very High Package 2 Medium The Package Assessment Report Value for Money Statement is, Package 1 Poor Value for Money Package 2 High Value for Money

Please outline in the box below the assumptions and uncertainties behind these benefit estimations.

The approach to the appraisal is detailed in the SOBC, section 3.3
The Package Assessment Report provides further analysis and the appraisal approach is detailed in section 6.2

5) Financial Case

Cost of producing OBC

Please provide a breakdown of the estimated costs of scheme development from inception to Outline Business Case in the following format.

Package 1

Heading	Further spend required to get to Outline Business Case	Updated Figures following Package Assessment Report
Project Management	£ -	
Engineering and Technology	£ 326,538 (Site Surveys)	£501,653 (surveys)
Transport Planning and Demand (Scheme model development)	£ 75,000	£200,000
Environment and Planning	£ 247,904 (Prelim Design)	£701,009
Funding and Finance	£ -	
Engagement and Communication	£ -	
Legal	£ -	
Land and Property Referencing	£-	
Sub Total	**£ 649,442**	**£1,402,662**
TOTAL	**£ 649,442**	**£1,402,662**

Package 2

Heading	Further spend required to get to Outline Business Case	Updated Figures following Package Assessment Report
Project Management	£ -	
Engineering and Technology	£ 1,235,319 (Site Surveys)	£549,868 (Surveys)
Transport Planning and Demand (Scheme model development)	£ 185,700	£200,000
Environment and Planning	£ 933,239	£1,039,978
Funding and Finance	£ -	
Engagement and Communication	£-	
Legal	£-	

Land and Property Referencing	£-	
Sub Total	**£ 2,354,258**	**£1,789,846**
TOTAL	**£ 2,354,258**	**£1,789,846**

It may be difficult to determine the precise date when scheme development started but we are interested in recent costs on this specific scheme. So please do not include:

- Historic costs. For example, if a body of work was undertaken ten years ago and shelved only to be restarted a year ago, only include costs from the restart.
- The cost of developing wider local transport strategies even if this scheme emerged from them.
- The cost of local model development for wider purposes. Only modelling specifically for this scheme should be included.

Development funding request

Please break the total of producing the OBC into financial years and indicate how much is being sought from DfT. (Please express in £m to three decimal points)

Package 1	**2022/23**	**2023/24**	**TOTAL**
Funding sought from DfT	£701,330	£233,777	**£935,107**
Local funding	£350,666	£116,888	**£467,554**
TOTAL	£1,051,996	£350,665	**£1,402,661**

Package 2	**2022/23**	**2023/24**	**TOTAL**
Funding sought from DfT	£894,922	£298,308	**£1,193,230**
Local funding	£477,462	£149,154	**£596,615**
TOTAL	£1,342,384	£447,462	**£1,789,846**

As advised from DfT a total of a one third contribution would be made by the Combined Authority. The forecast of estimates shown above are current estimates based on the current programme and includes £160,000 Combined Authority funding to enable phase one of the OBC to be undertaken.

Please confirm whether the contribution to development funding sought from DfT can be capitalised (you may provide additional comments or qualifications as necessary)?	Y

Capital cost of scheme

Please provide your best estimate of the capital cost of the scheme (excluding the costs of producing an OBC above).

We recognise that the scope and cost of the scheme may be approximate at this stage, but, if possible, please provide:

- The cost of each option if more than one. And please express as a range if necessary.
- Out-turn prices but ensure that the current prices and inflation uplift can be separately identified.
- Please include and separately identify the preparation costs (between OBC and start of construction).
- Please include a reasonable estimate of risk/contingency but do not add an additional optimism bias uplift (reference web-tag guidance if unclear).
- Explain the basis of the cost estimate (e.g. is it derived from detailed bills of quantities, benchmarked against other schemes etc).

The SOBC

Risk Adjusted Base Costs (2020 Prices) – Package 1

Calendar Year	Construction Costs (£)	Land & Property Costs (£)	Preparation and Supervision Costs (£)	Risk Allowance (£)	Risk Adjusted Base Cost (£)
2021			569,869		**569,869**
2022			332,741		**332,741**
2023	1,398,130	100,000	280,398	186,168	**1,964,695**
2024	2,796,259		368,328	372,335	**3,536,923**
2025					
Total	**4,194,389**	**100,000**	**1,551,337**	**558,503**	**6,404,228**

Risk Adjusted Base Costs (2020 Prices) – Package 2

Calendar Year	Construction Costs (Highways) (£)	Construction Costs (Structures) (£)	Land & Property Costs (£)	Preparation and Supervision Costs (£)	Total Base Investment Cost (£)
2021				1,821,317	1,821,317
2022				981,047	981,047
2023	2,754,115	2,488,986	100,000	952,288	6,295,389
2024	5,508,230	4,977,972		1,406,471	11,892,672
2025					
Total	**8,262,345**	**7,466,957**	**100,000**	**5,161,123**	**20,990,426**

The cost estimates have been costed based on initial design information, and include risk allowance with COVID -19 related construction risks

Package Assessment Report

Package 1

Package 1	Scheme / Component	Base Investment Cost (No Risk)	Risk Allowance	Risk Adjusted Base Cost
1.1	New A1139 NB Off-slip onto Bishops Road (Junction 4a)	£ 5,023,589	£ 1,186,335	£ 6,209,924
1.2	Junction 38 Improvements	£ 456,909	£ 75,861	£ 532,770
1.3	Fengate / Boongate Junction Improvements	£ 771,849	£ 140,768	£ 912,618
1.4	Junction 5 Improvements	£ 676,189	£ 134,321	£ 810,510
1.6	Wellington Street Improvements	£ 455,992	£ 74,136	£ 530,128
1.7	Junction 39 Improvements	£ 679,948	£ 146,720	£ 826,669
1.8	Sustainable Transport Improvements	£ 1,318,559	£ 263,712	£ 1,582,271
OBC	(Modelling, Business Case, Consultation, Stakeholder Engagement)	£ 200,000	£ 20,000	£ 220,000
FBC	(Modelling, Business Case, Consultation, Stakeholder Engagement)	£ 160,000	£ 16,000	£ 176,000
Total		**£ 9,743,036**	**£ 2,057,854**	**£ 11,800,890**

Note that the costs of Package 1 have increased since the SOBC as further survey and design work have identified higher construction costs associated with each of the schemes, including the requirement for an underpass beneath the new slip road.

Package 2

Package 2	Scheme / Component	Base Investment Cost (No Risk)	Risk Allowance	Risk Adjusted Base Cost
2.1	Boongate Dualling	£ 9,147,086	£ 2,171,251	£ 11,318,337
2.2	Junction 38 Improvements	£ 447,375	£ 75,861	£ 523,237
2.3	Fengate / Boongate Junction Improvements	£ 759,484	£ 140,768	£ 900,252
2.4	Junction 5 Improvements	£ 661,275	£ 134,321	£ 795,596
2.6	Wellington Street Improvements	£ 444,854	£ 74,136	£ 518,990
2.7	Junction 39 Improvements	£ 668,810	£ 146,720	£ 815,530
2.8	Sustainable Transport Improvements	£ 1,302,886	£ 263,712	£ 1,566,598
OBC	(Modelling, Business Case, Consultation, Stakeholder Engagement)	£ 200,000	£ 20,000	£ 220,000
FBC	Full Business Case	£ 160,000	£ 16,000	£ 176,000
Total		**£ 13,791,770**	**£ 3,042,770**	**£ 16,834,539**

Risk allowance has been applied on a scheme-by-scheme basis and varies between 16% and 24% (with 10% allowed applied to further design and business case development work). Optimism Bias has also been applied to the Risk Adjusted Base Cost for the construction of each scheme using a rate of 46% for roads and active travel improvements and 55% for structures in line with TAG unit A1.2 (July 2021).

A cost allowance has also been included for Sustainable Transport Improvements in the area. The

benefits of these schemes are not included in the economic assessment at this stage and are expected to improve the package BCRs when incorporated as part of the Outline Business Case.

Affordability (LLM schemes only)

Please provide in the box below a brief summary of why the scheme would be unaffordable other than via this bid to the LLM fund. Proposed LLM schemes should be single schemes that can only be delivered or justified as a whole. The Department's contribution will normally be above £50 million for LLM schemes.

N/A

6) Management Case

Outline Business Case delivery

Please provide a timeline for the production of an OBC.

A GANNT chart would be helpful but is not necessary. However please include the following milestones with dates:

- Production of SOBC, OAR and ASR (if not already produced).
- Production of LMVR.
- Completion of base model (if necessary)
- Forecasting report
- Start and end of public consultation
- Adoption of preferred option

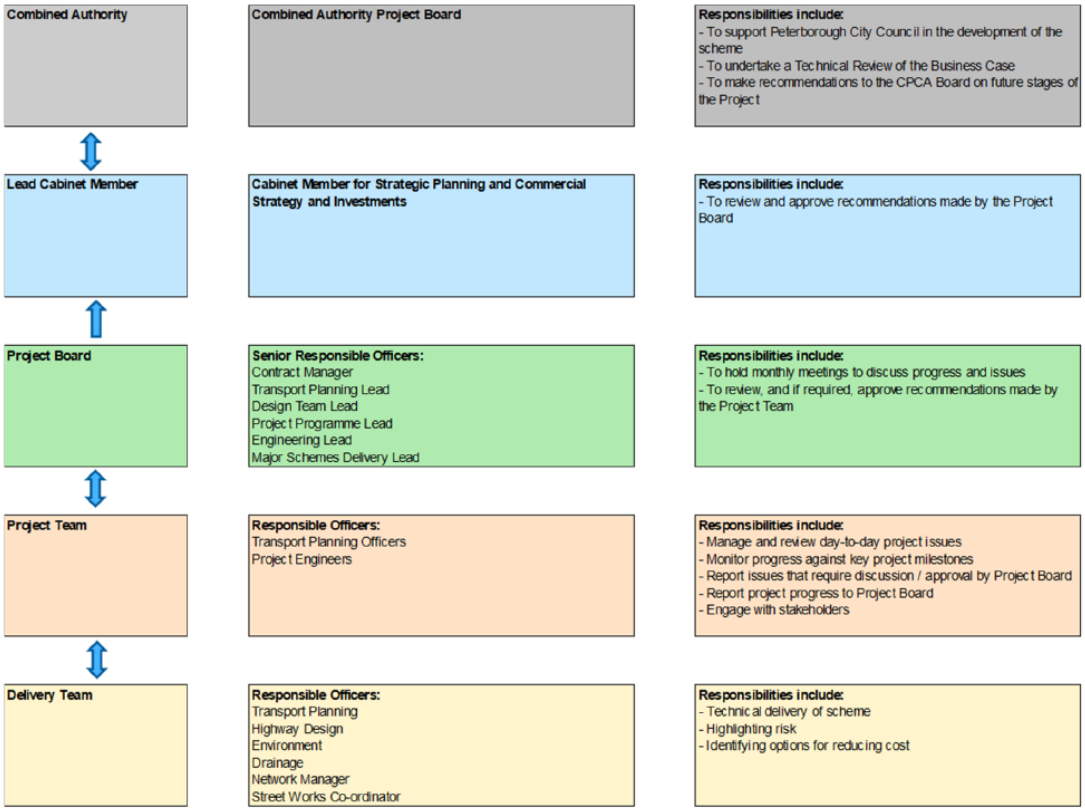
An indicative timeline has been produced below:

Timescale	Milestone Activity
January 2020	Strategic Outline Business Case and Option Assessment Report Submitted to CPCA and DfT
January 2021 - March 2021	Strategic Outline Business Case reviewed by DfT and approval sought from CPCA Board to release funding to undertake Phase 1 of the Outlne Buisness case
April 2021 – October 2021	Phase 1 of Outline Business Case (Further detailed study, including microsimulation modelling to determine preferred package)
November 2021 – December 2021	Phase 1 of Outline Buisness Case reviewed by DfT and approval sought for the release of funding to undertake Phase 2 of Outline Business Case and Preliminary Design
January 2022 – February 2023	Outline Business Case produced and Preliminary Design undertaken
February 2023	Outline Business Case and Preliminary Design Submitted to DfT
March 2023	Outline Business Case reviewed by DfT and approval sought from for the release of funding to undertake Detailed Design and produce a Full Business Case
April 2023 – February 2024	Detailed Design undertaken and Full Business Case produced
February 2024	Full Business Case and Detailed Design Submitted to DfT
March 2024	Full Business Case reviewed by DfT and approval sought for the release of funding to undertake construction
April 2024 onwards	Commencement of construction of scheme

Programme taken from SOBC and to be updated following agreement of funding

Outline Business Case Governance

Please set out the basic governance arrangements for production of the OBC, roles, responsibilities, resources etc.



The Combined Authority governance is set out in the Constitution and Assurance Framework.

SOBC, Section 6.4, page 86

Scheme Delivery

Please state the estimated delivery milestones as below, assuming MRN or LLM Programme Entry is granted at least 3 months after submission of the OBC. Please amend/add to milestones as necessary.

Submission of Outline Business Case (OBC) (for subsequent milestones assume at least 3 months from OBC to programme entry decision).	**As above table milestones.**
Submission of planning application.	
Determination of planning decision.	
Publication of scheme orders/CPOs (see section 7 below).	
Completion of Public Inquiry (if not applicable, see section 7).	
Confirmation of all statutory orders and consents.	

Completion of procurement.	
Full Business Case submitted to DfT.	
Start of Construction (assume 3 months from FBC to funding commitment).	
Scheme open to public.	

Note: If planning consent, scheme orders, CPOs or a public inquiry are not required please insert ‘n/a’ and provide an explanation in Section 7 below.

7) Orders and consents

Do you envisage that CPOs will be necessary? If not please explain here or insert appropriate reference to relevant SOBC paragraph.	N – Refer to SOBC, para 3.7
Are other statutory/highways orders required that would normally require a Public Inquiry (e.g. Side Roads Orders, Transport and Works Act Order). Please specify.	N – SOBC, para 2.14
What other statutory orders/consents are required? (e.g. heritage, environmental consents).	Y- SOBC, para 2.14
If CPO and other orders are required does your timetable assume that there will be a public enquiry? If not please explain here or insert appropriate reference to SOBC document.	N/A

8) Stakeholder Support

Please provide evidence of support for this scheme prior to the development of this bid, referencing activity from businesses, campaign groups, MPs etc.

It would be helpful to include any relevant links to news stories, campaign websites etc.

The Transport and Infrastructure Committee and The Combined Authority Board are comprised of political members from the constituent councils. The SOBC has been presented to both the Committee and Board to seek approval to finalise the document and to progress to the phase one of the OBC. A majority approval was given.

The SOBC section 2.13 provides stakeholder details.

Public engagement was undertaken as part of the Package Assessment Report - Phase 1 OBC. An integrated approach to the public engagement took place with the packages being included in the Embankment Masterplan engagement which took place in November 2021.

The Embankment Masterplan public engagement, which included the packages of transport options, used both a website, a webinar and an in-person event to gather views. A total of 1,489 surveys were completed.

In general there was support for improving connectivity around the embankment area. The Civic Society considered package 2 to be the more practical solution, but raised concern that the Wellington St Car Park is 800m walk to the embankment which may put off many wishing to use the embankment.

Does this scheme have implications for Highway England or Network Rail infrastructure? If so, using the box below describe what discussions have taken place with either of these organisations to facilitate this scheme?

At this stage we do not envisage any implications for National Highways and Network Rail.

9) Section 151 Officer Declaration

As Section 151 Officer for Cambridgeshire Peterborough Combined Authority I declare that the cost estimates quoted in this bid are accurate to the best of my knowledge and that Cambridgeshire Peterborough Combined Authority

[1] has allocated sufficient budget to develop the scheme's OBC on the basis of its proposed funding contribution.

[2] accepts responsibility for meeting any costs of developing the OBC over and above the DfT contribution requested, including potential cost overruns, and the underwriting of any third party contributions.

[3] accepts that no further increase in DfT funding will be considered beyond the maximum contribution requested.

Name: Jon Alsop	Signed:

Please email this completed form to:

LT.plans@dft.gov.uk

Please note that the size limit for attachments to a single incoming email to DfT is 20MB. If your submission is larger than this please submit separate emails, use a zip folder, or convert large files to an alternative format.

We would prefer it if annexes are separated out into individual pdf documents.

Part Two: Checklist

Please complete this checklist by referencing locations where the relevant material can be found in the SOBC document.

Strategic Case

Item		Section/Page
A detailed description of the physical scope of the scheme.		Page 45
The objectives of the scheme.		Section 3.8-page 34
A description of the process by which the scheme came to be identified as the preferred option for meeting those objectives including why alternative options were discarded.		Section 2.15 from page 41
How the objectives of the scheme align with the MRN, LLM and national transport objectives We do not expect all schemes to meet all of these objectives so please mark n/a if necessary.	• To ease congestion and provide upgrades on important national, regional or local routes.	- Table 2.1 page 10 - Page 18

Item		**Section/Page**
How the objectives of the scheme align with the MRN, LLM and national transport objectives We do not expect all schemes to meet all of these objectives so please mark n/a if necessary.	• To unlock economic growth, job creation opportunities, and support rebalancing.	- Table 2.1 page 10 - Section 2.5 page 24 - Page 29, 30 - Page 34
How the objectives of the scheme align with the MRN, LLM and national transport objectives We do not expect all schemes to meet all of these objectives so please mark n/a if necessary.	• To enable the delivery of new housing developments.	- Table 2.1 page 10 - Page 31
How the objectives of the scheme align with the MRN, LLM and national transport objectives We do not expect all schemes to meet all of these objectives so please mark n/a if necessary.	• To support all road users.	- Table 2.1 page 10 - Page 21, 22, 23 - Appendix B

Item		**Section/Page**
How the objectives of the scheme align with the MRN, LLM and national transport objectives We do not expect all schemes to meet all of these objectives so please mark n/a if necessary.	• To support the Strategic Road Network.	N/A
For schemes that directly aim to facilitate commercial or housing development on specific sites, details of the sites, current planning status, status of developer commitment and the expected impact of the scheme.		SOBC, section 1.3, page 4
The impact the scheme would have on: • **Access to planned HS2 stations or sites.**		
• **Access to International Gateways.**		
If relevant, details of public consultation activities on the scheme to date, and key findings including how any key questions/concerns have been addressed.		

Economic Case

Not all of the following documents are required at the SOBC stage.

If they have been produced please reference their location within the SOBC and/or supply the necessary documents.

Item	Section/Page
Option Assessment Report (OAR)	Separate Report
Data Collection Report	
Local Model Validation Report (LMVR)	
Present Year Validation Report (if required)	
Forecasting Report	
Economic Appraisal Report	
Social and Distributional Impacts Assessment	

Management Case

Item		Section/Page
Governance structure (including SRO, Project Board, Project Manager, and other key roles, and resourcing levels).		SOBC, Section 6.4, page 86
Detailed Project Plan		
Risk Management	Detailed Risk Register	Appendix B
Risk Management	Narrative to explain the most significant risks, how they are being managed and their potential impact on time and budget.	Section 2.12, page 38
Risk Management	Risk management strategy	Section 6.9 page 92
Project Assurance e.g. Gateway Reviews		CPCA assurance Framework
Evaluation Outline evaluation plan including a statement of core evaluation objectives.		SOBC, Section 6.10, page 92 Monitoring and Evaluation Plan

Commercial Case

Item	Section/Page
Description of the preferred procurement strategy	Section 5.3, page 81
Rational for the selection of preferred procurement route against possible alternatives	As above
Explanation of how costs and risks will be shared throughout the contract	Section 5.4, page 82 and See Risk Management above

Financial Case

Item	Section/Page
Cost breakdown	Table 4.4 page 71 & Table 4.9
Details of and justification for inflation assumption used.	Table 4.1 page 69, 72, 75
Risk Assessment	See Risk Management above
Evidence of potential third party contributions	Funding Constraints page 76

CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY

Agenda Item No: 2.2

Report title: A10 Outline Business Case

To:	Transport and Infrastructure Committee
Meeting Date:	12 January 2022
Public report:	Public Report
Lead Member:	Mayor Dr Nik Johnson
From:	Rowland Potter
Key decision:	No
Forward Plan ref:	N/A
Recommendations:	The Committee is invited to recommend the Combined Authority Board:

a) Note the outputs of the Cambridgeshire County Council Highways and Infrastructure Committee paper
b) Delegate authority to the Head of Transport, in consultation with the Monitoring Officer and Chief Finance Officer to develop the scope for the delivery of the Outline Business Case
c) Approve the release of £2m funding from Department for Transport, to be spent in 22-23, for the delivery of the Outline Business Case, and agree reprofiling the remaining 21-22 budget into 22-23.
d) Subject to an extension to the existing DfT grant being agreed, delegate authority to the Head of Transport, in consultation with the Monitoring Officer and Chief Finance Officer to issue a capital grant funding agreement for the delivery of the outline business case by Cambridgeshire County Council.

Voting arrangements:	A simple majority of all Members present and voting

1. Purpose

1.2 To develop scope and progress the delivery of the A10 Outline Business case as a follow on from the A10 Strategic Outline Business case work.

2. Background

2.1 In January 2018, Cambridgeshire County Council (CCC) published a Preliminary Strategic Outline Business Case (PSOBC) for improvements to the transport network between Ely and Cambridge as part of the Ely to Cambridge Transport Study.

2.2 The CPCA completed a Strategic Outline Business Case (SOBC) for dualling of the A10 and improvements to junctions on the route in 2020 and is seeking to progress to an Outline Business Case (OBC), which would identify a preferred option and undertake preliminary design. The OBC would be submitted to the Department for Transport (DfT) for consideration for further funding from its Major Road Network programme.

2.3 The CPCA has asked the County Council to undertake the Outline Business Case work. The current estimated cost of this stage of work as between £2M and £6M. The following funding is identified:

- In July 2021 the DfT awarded £2M "for development work on the A10 Dualling and Junctions (Cambridge to Ely) scheme up to and including the production of an Outline Business Case (OBC) as defined in the DfT's Transport Business Case guidance."
- The CPCA has an approved sum of £2M of funding for the outline business case stage within the MTFP.
- DfT has also indicated that CPCA has the opportunity to seek an additional £2m from the DfT as options emerge, depending on solutions proposed, for potential further technical development on which future funding decisions can be based.

3. Next Steps

3.1 The committee is requested to approve the collaborative development of scope for the progression of delivery of the Outline Business Case.

3.2 The combined authority would then with agreement of Cambridgeshire County Council provide a capital grant funding agreement for the delivery of the outline business case.

4. Significant Implications

4.1 None

5. Financial Implications

5.1 For the Combined Authority to take forward the development of the scheme to Outline Business Case a funding agreement will first be required with CCC, to the value of the

£4m, with a gateway point to seek the additional £2m should the complexity of options require the additional funding.

- The DfT grant currently expires on 31 March 2022, the DfT will be engaged during the scoping discussions to seek an extension to this grant, should the extension not be approved a further paper will be presented at board to agree the way forward.
- If, following the development of the Outline Business Case, the scheme is not constructed, then any costs incurred on development of the project to that date on the Outline Business Case will be required to be funded from revenue, capitalisation of this funding will be a condition of the grant funding agreement between the CPCA and CCC.
- If, following the development of the Outline Business Case, construction does not happen, then the DfT reserves the right to seek reimbursement of the £2m grant, this risk needs to be considered in the approval of this paper.
- There is currently no provision to meet any costs above the £4m (£2m from DfT and £2m from CPCA) if the cost of developing the Outline Business Case exceeds £4m this were the further £2m from DfT not forthcoming.

5.2 Should recommendation c) be agreed an additional £2m budget will be added to the approved 2022-23 capital programme, and the remainder of the existing unspent 2021-22 budget will be slipped into 2022-23.

6. Legal Implications

6.1 None

7. Other Significant Implications

7.1 There are increased challenges in relation to safety and climate change following the completion of the Strategic Outline Business Case and as such additional consideration will be required in the development of the scope of the Outline Business Case to ensure compliance with new and emerging policies both regionally and nationally.

7.2 There is an outstanding commitment to consider pedestrian and cycling crossing at the A10/A142 BP Roundabout at Ely, for which an independent funding bid has been submitted for consideration in the current budget prioritisation exercise, however this junction will remain one of significance within the scoping exercise of the Outline Business case.

8. Appendices

8.1 None

9. Background Papers

9.1 A10 Ely to Cambridge Outline Business Case – Cambridgeshire County Council – Highways and Transport Committee paper Document.ashx (cmis.uk.com)

CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY

Agenda Item No: 2.3

A141 Huntingdon and St Ives Strategic Outline Business Case

To:	Transport and Infrastructure Committee
Meeting Date:	12 January 2022
Public report:	Public Report
Lead Member:	Mayor Dr Nik Johnson
From:	Rowland Potter
Key decision:	No
Forward Plan ref:	N/A
Recommendations:	The Committee is invited to:

a) note the St Ives study and progress
b) note the A141 and St Ives option appraisal report
c) note the A141 and St Ives Strategic Outline Business Case
d) Recommend the Combined Authority Board approve the development and costing up of the next stage of the project for Outline Business Case and Preliminary design.
e) Recommend the Combined Authority Board approve the programme for, and costing up of, the Local Improvement schemes for St Ives.

Voting arrangements:	A simple majority of all Members present

1. Purpose

1.2 The purpose of the report is to:

- Introduce and update on progress of the St Ives Study
- Explain the progress and outcomes of the A141 and St Ives Strategic Outline Business Case
- Discuss St Ives Local Improvement Schemes
- Understand the proposed next stages to progress the project

2 Background

2.2 In April 2018, the A141 Huntingdon Capacity Study (commissioned by Cambridgeshire and Peterborough Combined Authority) and the St Ives Area Transport Study (commissioned by Cambridgeshire County Council) commenced as a joint delivery study to consider the capacity challenges in the area

2.3 In March 2019, the Combined Authority subsequently approved the commissioning of a Huntingdon Third River Crossing feasibility study to also consider how that proposal might address the capacity challenges in the area.

2.4 Emerging findings from the A141 Huntingdon Capacity Study and St Ives Area Transport Study suggested that they needed to take into account the wider growth issues in the Huntingdon and St Ives area. It was therefore agreed by the January 2020 Transport and Infrastructure Committee and Combined Authority Board that this work be extended to include the Huntingdon Third River Crossing work.

2.5 The change to the study scope meant that it was necessary to compare the performance of the wider road network as a result of both schemes. The proposal for a Huntingdon Third River Crossing was therefore included within the traffic modelling and a high-level environmental desktop study for the area. The options compared included a bypass route for the A141 North of Huntingdon as well as the river crossing.

2.6 The outcomes of the study were reported at the August 2020 Combined Authority Board. Evidence demonstrated that an A141 bypass was the better performing option for addressing current and future congestion and growth and the Board decided to commission a Strategic Outline Business Case for that option. Atkins were subsequently engaged through a procurement exercise to undertake a Strategic Outline Business Case for that option.

2.7 In March 2021 the Combined Authority Board were presented with the St Ives Strategic Outline Business Case paper. This detailed that in August 2020 at the Board a decision was taken that £500,000 from the Capital budget will be allocated for developing a Strategic Outline Business Case for St Ives. This was to be spent and progressed by the Cambridgeshire County Council. Following discussions with the County Council the Combined Authority has decided that there is a better way forward to progress the work associated with St Ives. The project team have been able to find efficiency savings from our revenue budget to fund the St Ives study, which means we can commission the work directly from the Combined Authority.

2.8 In June 2021 the Board were presented with the latest update on the A141 Huntingdon Strategic Outline Business Case (SOBC) including a description of the SOBC and results on the public and stakeholder engagement

3 St Ives Study

3.1 Building upon the previous study work, an Existing Conditions Report has been prepared. The report presents the existing conditions for the St Ives, Houghton and Wyton area and comments on the future conditions following significant planned growth. It also sets out the strategic context and existing evidence base for the scheme. As a key town in Huntingdonshire, St Ives has and will continue to be a focus for housing, job and infrastructure growth. The town has strong economic connections to Huntingdon, Peterborough and Cambridge, as well as the other market towns within Huntingdonshire.

3.2 The most dominant mode for travel to work in St Ives is the car, and this dominance leads to congestion in the town and wider district. In particular, the A1123 and A1096 through the town are very busy routes with peak time congestion, leading to rat running through St Ives town centre. This in turn increases congestion and compromises bus services in this area.

3.3 The report documents the case for change for St Ives including

- Local policy documents identify the need to ensure that town centres retain their roles as the focus for local communities.
- Significant development is proposed around Huntingdonshire up to 2036, particularly at Alconbury Weald, St Ives West and Gifford's Farm, increasing the demand for transport in the area.
- The region has ambitious economic growth plans, centred around doubling the size of the Cambridgeshire and Peterborough economy over 25 years.
- St Ives clearly has a significant role to play in delivering growth in both housing and the economy. Improving transport connections and capacity will support growth in the region and provide greater opportunity to capitalise on the city's successful technology economy.
- Local Plan growth can be accommodated on the local transport network through local junction improvements coupled with the A14 Cambridge to Huntingdon scheme. However, there are ambitions for growth beyond this and there is the possibility of further major development sites becoming available, including RAF Wyton and Gifford's Farm, which would require further infrastructure measure to allow this growth to occur.

3.4 An Appraisal Specification Report has been written, this report provides the context for the appraisal to be undertaken and defines the scope, methodology and assumptions to be adopted in undertaking the modelling and appraisal. In summary, the report documents the proposed approach to the project and completing the SOBC.

Public Engagement

3.5 Public and Stakeholder Engagement was undertaken between 14th June and 5th July 2021. The engagement focused on current thoughts / opinions on the A141 as well as the initial options. In total, there were 469 responses to the survey.

3.6 51% of the respondents declared an interest in the area as a 'resident of St Ives, Houghton, Needingworth, etc'. Additionally, 'leisure walker' (24%), 'other' (7%) and 'commuter by car' (7%), and 'leisure cyclist' (5%) were the next most common responses. The majority of respondents indicated that they made trips within their local area by car/van (as the driver) (44%) and walking (36%). The next most popular mode was bicycle or e-bicycle (15%) with other modes capturing 2% or less.

3.7 Respondents were asked to rank five issues they are most concerned about in St Ives. The majority of respondents 'strongly agreed' or 'agreed' with the issues presented, with fewer respondents 'disagreeing' or 'strongly disagreeing'. The most common issues that respondents were the most concerned about were congestion (339), heavy traffic (269), and road safety (241). Fewer respondents, but still a significant number, agreed with improve air quality and improved journey times being concerning issues, (233) air quality and 193 journey times) as shown in Figure 1.

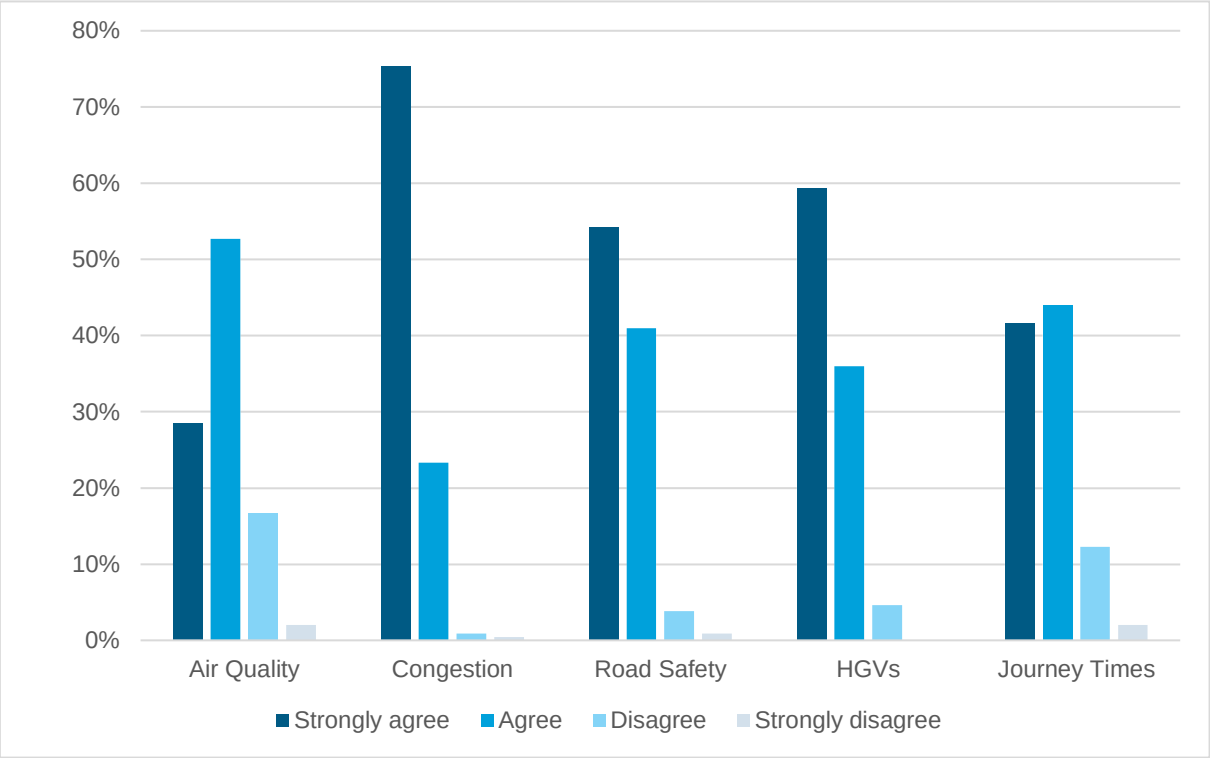


Figure 1 – Which issues around the A141 neighbourhood area you most concerned about?

3.8 In terms of what matters to the respondents in terms of future developments of their local transport network, the most common response was 'Very important' to all issues as shown in Figure 2.

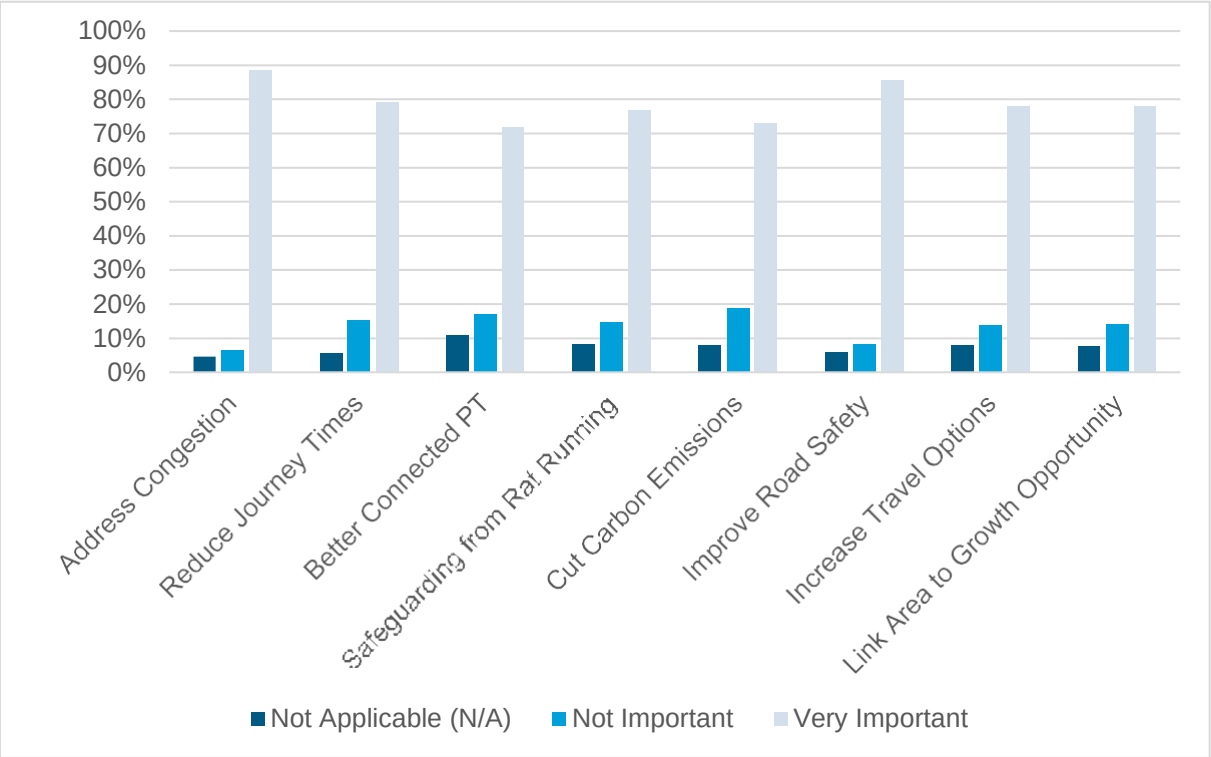


Figure 2 – What matters to you in future development of your local transport network?

3.9 Overall, when asked 90% of respondents strongly agreed or agreed with the need to reduce road traffic (cars, lorries, vans). Also. respondents would agree that there is a need to improve ease of bus and coach use, the results were distributed from 'strongly agree' to 'strongly disagree'. The most responses were provided for the 'agree' option (150), with slightly fewer responses for 'disagree' (128) and 'strongly agree' (116). Fewer respondents felt strongly about this issue, with only 116 responding 'strongly agree' and even fewer (59) responding 'strongly disagree'. Regarding, whether respondents would agree that there is a need to improve ease of minibus, taxi, minicab use, the results were skewed more towards 'disagree' (238) and 'strongly disagree' (123). Fewer respondents were in favour of this option with only 15 respondents 'strongly agreeing' and 57 respondents 'agreeing'.

3.10 Overall, most respondents were in agreement in the need to reduce road traffic. Respondents also agreed about reallocating road space to walking and cycling infrastructure. Fewer respondents felt that there was a need to reallocate road space to public transport as shown in Figure 3 and 4.

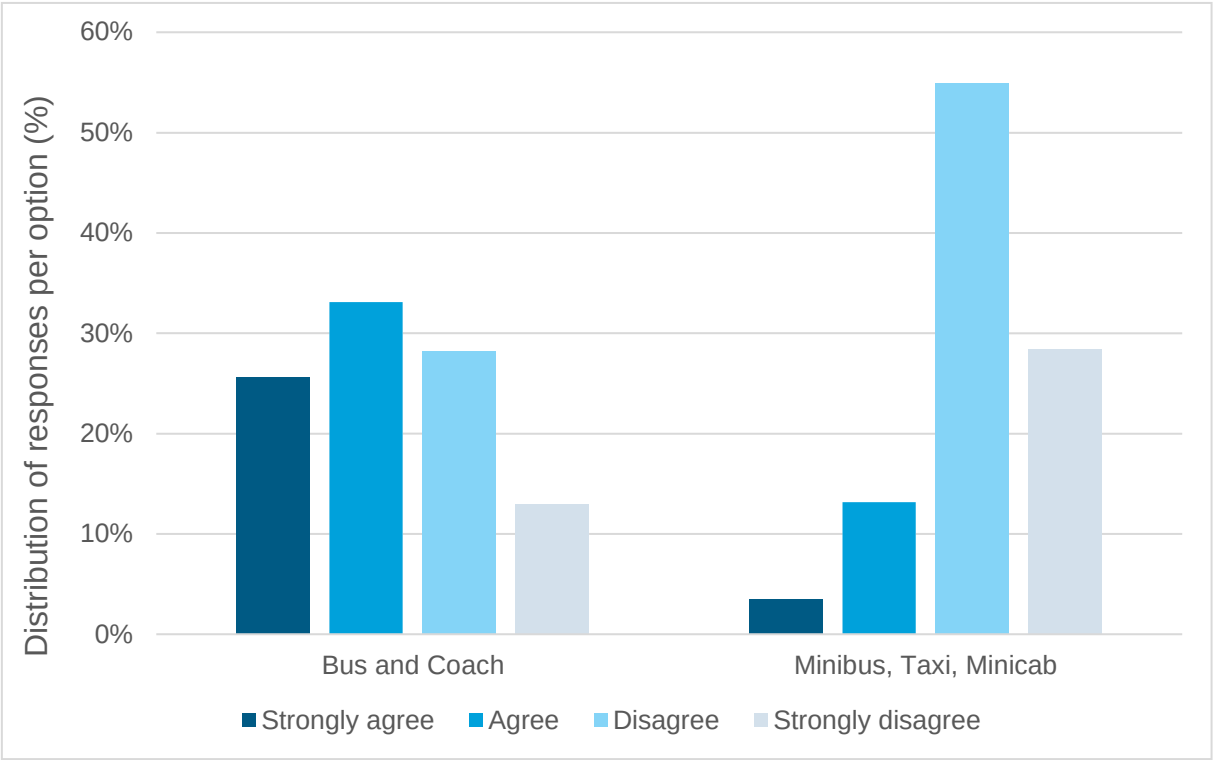


Figure 3 – To what extent do you agree there is a need to make travel by public transport easier in St Ives (bus, coach, taxi or minibus)?

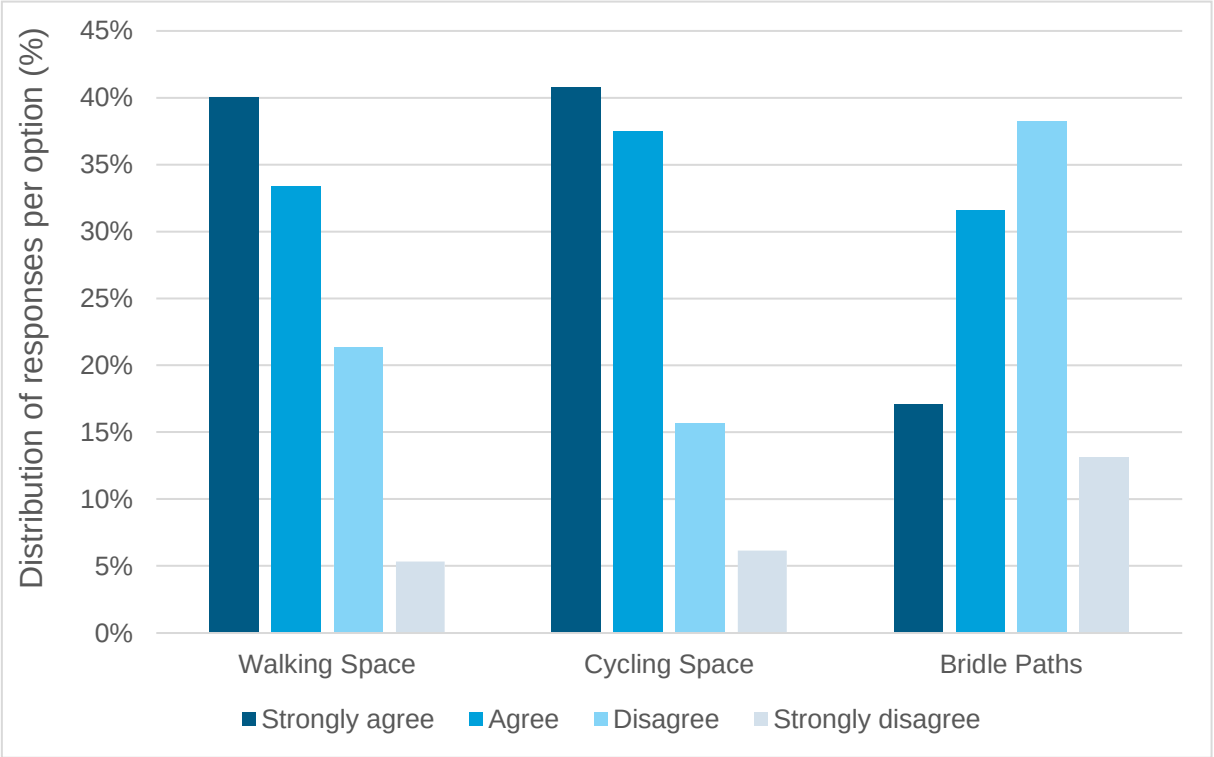


Figure 4 – To what extent do you agree there is a need to allocate road space for non-motorised users (walkers, cyclists and horse riders)?

3.11 The proposed options for the study area included:

- Option 1: Full offline bypass with no connections from A141 to A1123;
- Option 2: Full offline bypass with connections to Marley Road;
- Option 3: Offline bypass from A141 connecting to Marley Road. From the B1040, an offline link provided to connect to A1123;
- Option 4: Local Junction Improvement Package;
- Option 5: Sustainable Travel Package; and
- Option 6: Non-Motorised User Package.

3.12 Overall, respondents most favoured a bypass option with other sustainable / active travel options and Local Junction Improvements Packages. A combination of Option 1 and Option 4 being the most favourable as shown in Figure 5.

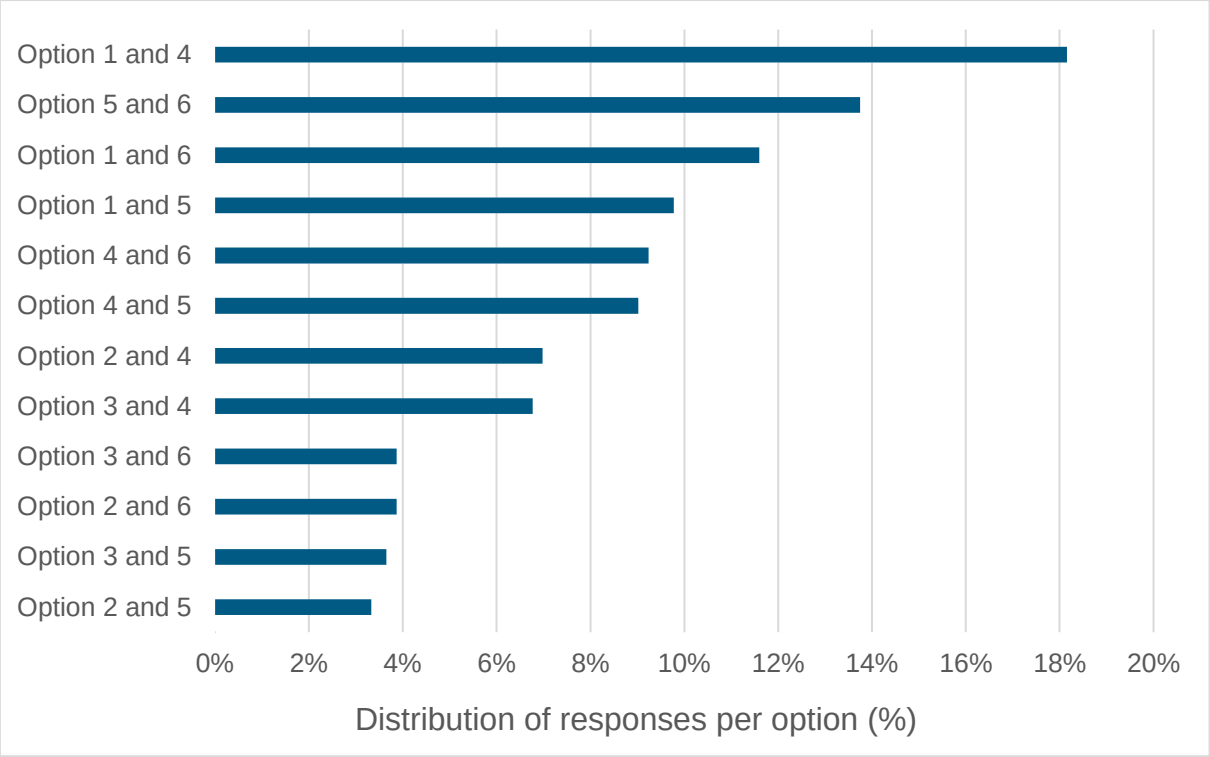


Figure 5 – Which combination of the option elements would you prefer to see considered further?

3.13 In summary the 'comment drop on a map' section of the engagement showed:

- Congestion - Congestion was frequently mentioned alongside concerns regarding the volume of commuters and heavy traffic travelling through the study area.
- Active Travel - Active travel comments were provided under a number of sub-themes, generally highlighting the need for improved and safer routes for pedestrians and cyclists between St Ives and surrounding areas.
- Environmental Impacts - A number of comments made by respondents were in relation to environmental factors. These were made in the context of flooding, pollution, noise and conserving green space within across the study area
- Development - Respondents noted their concerns with the increasing amount of development occurring in the study area and the subsequent impact of this upon the transport system
- Public Transport – a number of comments were made on public transport including more extensive services, priority and better funding.

- Safety - Numerous comments were made by respondents in relation to safety concerns within the study area for pedestrians and cyclists. This is generally in correlation with concerns regarding vehicle speed, visibility, crossings and the condition of active transport infrastructure
- Ratrunning - A number of respondents highlighted rat running and possible increase from new developments.

3.14 A Members Meeting was held, prior to the engagement period. In general, responses were consistent in that they did not think a bypass on its own would solve the problem at all or entirely. It should be noted that most comments stated that constructing a bypass (option 1, 2 or 3) would only have a positive impact on the transport network if considered in conjunction with the other options (4, 5 or 6). Most responses favoured bypass option 1 in conjunction with sustainable transport measures 5 and 6. However, it should be noted that some responses were sceptical as to whether a bypass, be that option 1, 2, or 3, would improve current transport issues or increase them. Instead respondents suggested there should be greater emphasis on assisting active transport mode users to encourage more people to use non-motorised modes of transport, thus reducing the need for a new bypass due to a reduction in motorised traffic on the roads.

Option Assessment Report (OAR)

3.15 Following the engagements an OAR was undertaken. The purpose of the OAR is to report on the previous stages of the project including initial Options Identification and Option Sifting and Engagement. The report then focuses on the Multi-Criteria Analysis Framework (MCAF) for the schemes. It then outlines the packages that will be taken forward for further analysis and reviewed in the Strategic Outline Case (SOC); formerly known as the Strategic Outline Business Case (SOBC) as shown in Figure 6.

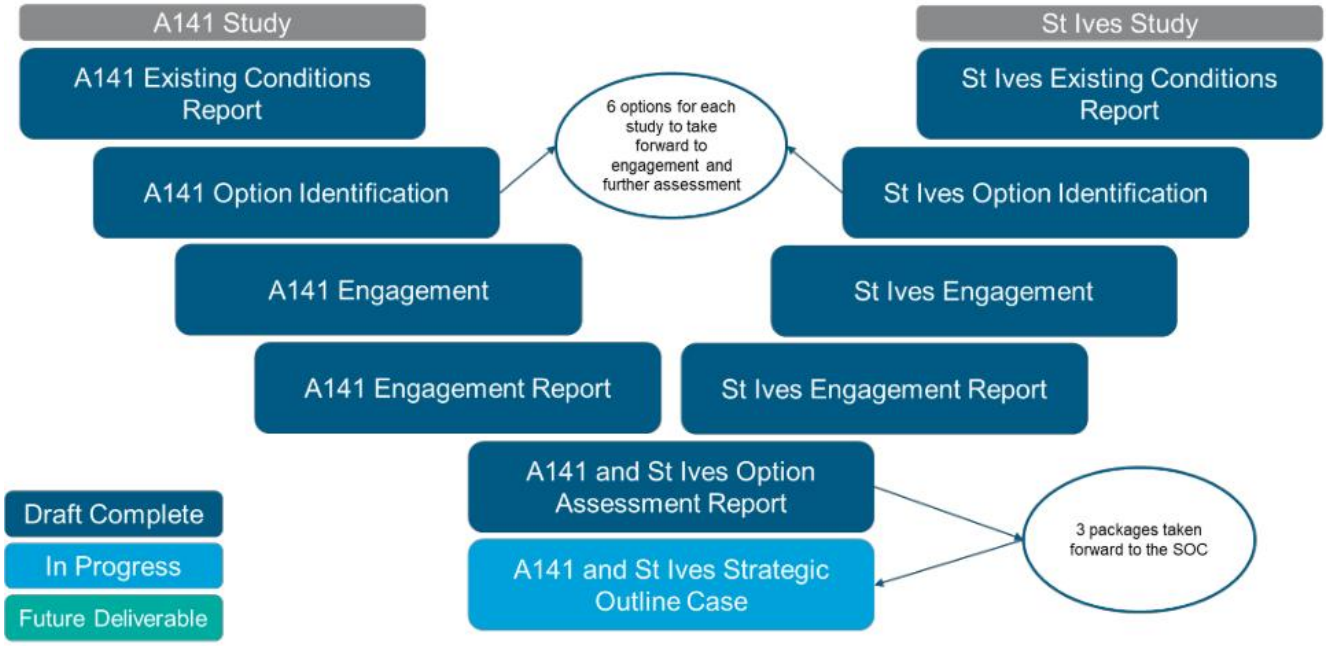


Figure 6 – Project Development

3.16 At this point in the study the A141 and St Ives projects have been aligned and bought together. This is due too:

- Either scheme having an impact on the other therefore one area cannot be focused on in isolation
- Both areas suffer from similar existing problems (as they are so closely linked)
- Both areas have similar future challenges so ideal to have a holistic solution.
- Both schemes are/were at a similar point in development following the initial Skanska work.

3.17 The MCAF considered all 12 options as presented at the engagement stage that best met the objectives and outcomes of the study. Based on a robust identification, sifting, engagement and assessment process, the better-performing options that were recommended to be progressed to SOBC stage are shown in Figures 7, 8 and 9.

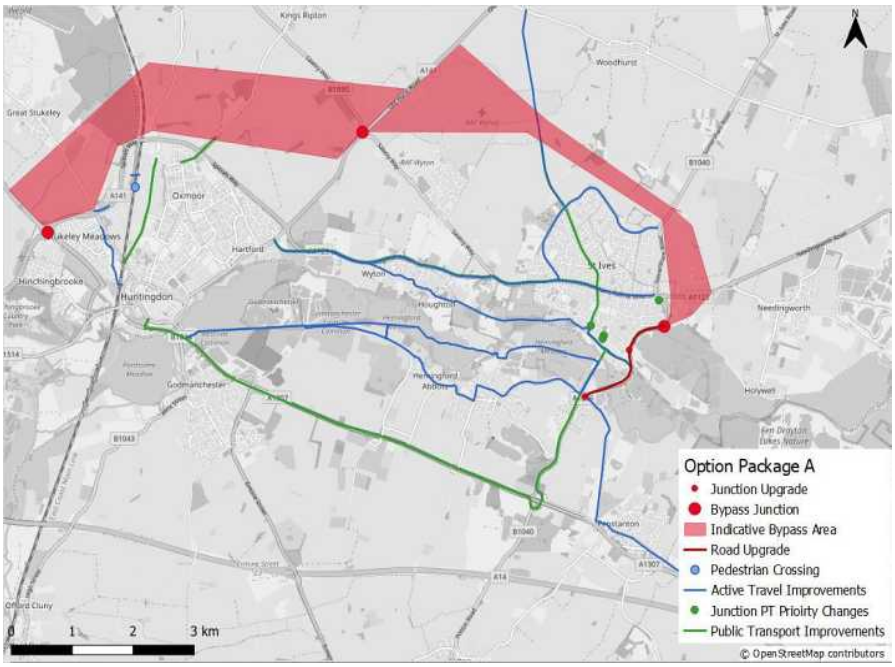


Figure 7 - Package A

- Bypass between Spittals and the A1096 with a junction with the existing A141 at the B1090 near RAF Wyton
- Extension to existing guided busway services
- New and improved active travel connections
- Junction and signal improvements in St Ives

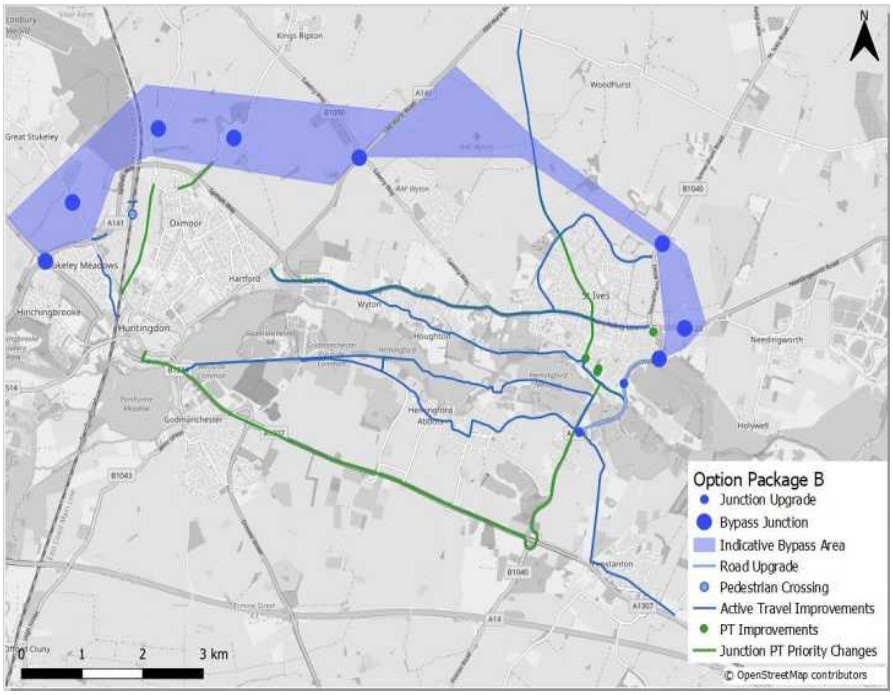


Figure 8 - Package B

- Bypass between Spittals and the A1096 with junction connections with existing roads
- Extension to existing guided busway services
- New and improved active travel connections
- Junction and signal improvements in St Ives
-

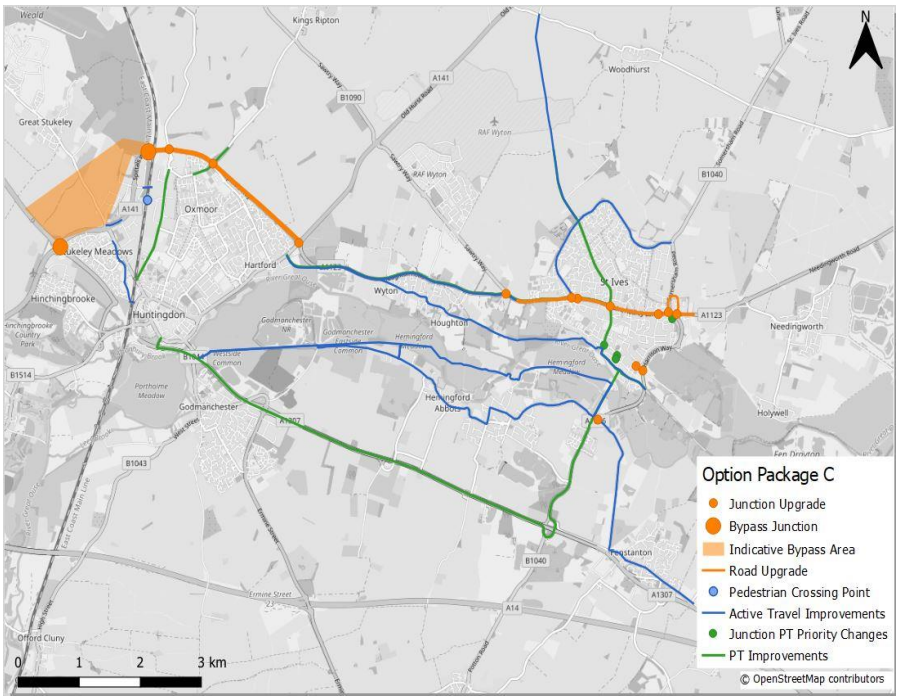


Figure 9 - Package C

- Bypass of the A141 to the west of Huntingdon
- Widening of the A141 from Tesco roundabout to A1123 junction
- Extension to existing guided busway services
- New and improved active travel connections
- Junction and signal improvements in St Ives

Strategic Outline Business Case (SOC)

3.18 The SOC is the first phase of the Business Case process. The SOC has been produced in accordance with the Department for Transport (DfT) three-phased decision-making procedure for investment in transport infrastructure. The SOC "establishes the potential scope of the transport proposal. This sets out the rationale for intervention (the case for change) and confirms how the investment will further the organisation's priorities and wider government ambitions (the strategic fit) to determine the 'preferred way forward'

3.19 A summary of the strategic dimension shows that the proposed upgrade to the Huntingdon and St Ives transport network aims to mitigate existing and future problems identified within the study area, namely highway network delays / congestion including rat running, lack of sustainable travel alternatives and the growth/development plans and aspirations within the study area. The option identification, sifting and assessment process undertaken as part of this Strategic Dimension identified the three potential scheme packages to be progressed including Package A, B and C as shown in Figure 7.8 and 9 respectively.

3.20 Overall, the economic dimension shows Packages A and B both perform strongly against the objective of addressing the current congestion on the network, with reduced level of delay, improved journey times and reductions in rat running. Package C does offer some improvements in this area, but to a much lesser extent. The additional connectivity offered in Package B enables this package to perform the strongest in this area, by enabling greater use of the bypass, providing greater second-order benefits of decongestion in other areas for those users remaining on the existing network. The bypass scheme has been flagged as a concern in regard to maintaining traffic levels at or below 2018 levels, as constructing a new highway may make private vehicle use more attractive than active travel and public transport. This should be looked at further as the scheme is developed to ensure that journeys that could be made by sustainable modes are not encouraged back to vehicle as a result of the attractiveness of the highway network. The current scheme packages do not intercept or substitute car trips with alternative transport modes however, they do decongest the current network and create an opportunity to achieve modal shift through the reallocation of road space and demand management through the planned additional developments.

3.21 The economic dimension explains the packages seek to contribute to the reduction of emissions to ‘net-zero’ by 2050, to minimise the impact of transport and travel on climate change. It is a concern that constructing a new bypass would lead to a reduction in active travel and public transport if reallocation of sustainable alternatives is insufficient, however the details show that traffic is being moved away from populated town centre areas and rural villages on to more strategic transport network infrastructure, which could lead to improved impacts on certain emission receptors. The additional connectivity in Package B also offers the best option to reduce vehicle milage while still using the bypass. This needs to be considered further as the business case is developed, with more detailed environmental assessments undertaken. It should also be noted that the environmental impact during construction has not been considered at this stage however, given the nature of the infrastructure proposed, the environmental impact of the construction phase also needs to be considered further at the OBC stage. It is anticipated that package C would have lower impact than Package A and B due to the lower level of construction required.

3.22 The best performing of the packages is Package B, which yields a BCR of 1.74. As this value is between 1.5 and 2, it has a ‘Medium’ Value for Money (VfM) category. It generates most of its benefits through economic efficiency benefits, but also has a positive effect on accidents and greenhouse gases. Package A yields a BCR of 1.34, which falls into the ‘Low’ VFM category as the BCR is between 1 and 1.5. It generates most of its benefits through economic efficiency, but has a negative effect on accidents and greenhouse gases. Package C is the worst performing of the packages, yielding a BCR of 0.13. this is classified as ‘Poor’ VfM as its’ BCR is less than 1.

3.23 The financial dimension shows in the SOC that a high-level initial capital cost has been calculated for each scheme. This will be looked at in more detail as the project progresses through the Business Case stages.

3.24 The commercial dimension of the SOC demonstrates that the package of schemes is commercially viable Routes to procurement available include the Eastern Highways Alliance Framework 3, Standalone – 'Find a Tender' service; the existing Cambridgeshire Highways Services Contract; and the Cambridgeshire and Peterborough Joint Professional Services Framework. The preferred procurement strategy and sourcing options will be developed during the next stage of the project.

3.25 The management dimension demonstrates that the package of schemes is deliverable. The CPCA is responsible for the development and the delivery of the Huntingdon and St Ives Transport Study Scheme. To progress the project onto the next stage collaboration with CCC is necessary.

3.26 The overall conclusion of the SOC is that there is a case to progress the project to Outline Business Case. Further investigation into Option A, B or a combination of these might yield the best outcome – or even a further alternative as well as other sustainable options that could compliment the scheme. An independent review of the business case was undertaken of the SOC. Confirmed a number of areas that will require more detail for example maintenance/renewals costs at OBC stage that may influence the VfM. This will be worked up at OBC stage.

Next Steps

3.27 The next steps of the study include collaboration with CCC for the commencement of the development of programme and cost for the next stage of the project for Outline Business Case and Preliminary design. Following this the programme of Outline Business Case includes further investigation Option A, B, combination of both or a further alternative scheme, engagement, surveys, Outline Business Case process, preliminary design and consultation. This work would be expected to last 18 to 24 months approximately. Though during this period there would be phased realises of information at defined points.

St Ives Local Improvements

3.28 Delivery of the St Ives Package of highway improvements identified in the A141 and St Ives Transport Study Options Appraisal Report dated 2020. Comprising highway works to change junction priorities, introduce a 20mph limit, and parking restrictions, bus stop improvements, walking and cycling wayfinding. Development (design only) of a network of NMU investment based on the findings of the St Ives Strategic Study. To progress the project onto the next stage collaboration with CCC is necessary and a proposal, cost and programme will be developed to bring forward to Committee and Board to drawdown the funds and commence the schemes as soon as possible.

4 Significant Implications

4.1 None

5 Financial Implications

5.1 The next stage of work is developing the scope and cost of the OBC, this will be done utilising the in-house Transport team so has no direct financial implications. Once the scope and cost for the OBC development have been established the proposal to fund the development will be brought back to the Committee and Board for consideration.

6. Legal Implications

6.1 None

5. Other Significant Implications

5.1 None

6. Appendices

6.1 None

7. Background Papers

Combined Authority Board report 14th July 2020

Combined Authority Board report 6th January 2020

A141 Huntingdon Northern Bypass Existing Conditions Report 3.0.pdf

St Ives Transport Study Existing Conditions Report v2.0.pdf

A141 Huntingdon Northern Bypass Engagement Report v2.0.pdf

St Ives Transport Study Engagement Report v2.0.pdf

Huntingdon and St Ives Transport Study_OAR_v.1.0.pdf

Huntingdon and St Ives SOC.pdf

CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY

Agenda Item No: 2.4

Report title: Local Transport and Connectivity Plan Update

To:	Transport and Infrastructure Committee
Meeting Date:	12 January 2022
Public report:	Public Report
Lead Member:	Mayor Dr Nik Johnson
From:	Rowland Potter
Key decision:	No
Forward Plan ref:	N/A
Recommendations:	The Committee is invited to recommend the Combined Authority Board: Note the outputs of the October Soft Launch public engagement
Voting arrangements:	No vote required

1. Purpose

1.1 To report the outputs of the soft launch public engagement held online between Monday 1st November until Sunday 28th November 2021.

1.2 Provide a verbal update on progress toward the formal consultation proposed for 6 weeks that is scheduled to commence after the CA Board later this month.

2. Soft Launch Public Engagement

2.1 The Combined Authority undertook a four-week, public engagement exercise, that was open for comments on Monday 1st November until Sunday 28th November 2021, specifically in relation to the Local Transport and Connectivity Plan.

2.2 The purpose of the four-week public engagement was to allow our local communities, stakeholders and businesses the opportunity to comment about their vision and priorities for transport within and across the region. The feedback received will be used to shape the emerging refreshed Local Transport and Connectivity Plan before formal consultation takes place. This consultation is scheduled to commence following the CA Board in January 2022.

2.3 During the public engagement, the Combined Authority received a total of 553 online feedback forms and 16 hard copy feedback forms, together with five emails.

2.4 The feedback form asked respondents to complete seven questions. Participants had the opportunity to focus their feedback on specific locations within our region, as question six enabled respondents to select which part of the region they wanted to provide feedback on. Of the 569 feedback forms received, the following summary is provided:

- **96.2%** understood why the vision for transport needs to be updated.
- **57.4%** either strongly agreed or mostly agreed that the updated vision is the right future for transport in the region.
- The most recurring comments, when asked what changes should be made to the transport vision, concerned; improving cycling and pedestrian links (83), the need to improve transport infrastructure (75), and a desire to provide new bus routes (72).
- **52.9%** strongly agreed or mostly agreed that the aims and objectives listed are the right transport priorities for the region.
- When asked about what aims and priorities needed to be included the top three issues related to: more ambitious net-zero targets (61), the need to provide a greater transport infrastructure (47), and a desire to ensure that the transport network is affordable (39).
- Regionally, bus routeing and frequency was ranked as the highest priority in five out of six regions, only Cambridge had a different top priority – reducing congestion in the city.
- Enabling communities and people access to opportunities was ranked as the highest priority (192), swiftly followed by the environment (187). These were the most important issues selected relating to how transport is also important in supporting other positive changes.

3. Formal Consultation

3.1 Following the soft launch public engagement and the feedback received, the team have been engaging regularly with elected members and leaders from across all our constituent Councils, including District, City and Councils, as well as the Greater Cambridge Partnership. This engagement has enabled the development of the next phase of consultation documents.

3.2 The consultation documentation is incomplete at time of publication of this paper and so a verbal update will be provided at Committee with more detailed documentation provided at the Combined Authority Board in preparation for formal consultation.

4. Significant Implications

4.1 None

5. Financial Implications

5.1 There are no financial implications as the approval has previously been given for consultation at board on 27 October 2021.

6. Legal Implications

6.1 None

7. Other Significant Implications

7.1 None

8. Appendices

8.1 None

9. Background Papers

9.1 Link to the Your LTCP

CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY

Agenda Item No: 2.5

Report title: Budget and Performance Update

To:	Transport & Infrastructure Committee
Meeting Date:	12th January 2021
Public report:	Yes
Lead Member:	Mayor Dr Nik Johnson
From:	Rowland Potter, Head of Transport
Key decision:	No
Forward Plan ref:	N/A
Recommendations:	The Transport & infrastructure Committee is recommended to: Note the January Budget and Performance Monitoring Update Voting arrangements: note only item, no vote required.

1. Purpose

1.1 This report provides the regular budget and performance reporting to the Transport and Infrastructure Committee.

2. Background

2.1 The Combined Authority Board has decided that budget and performance reporting should be seen in the round.

2.2 At its January 2021 meeting, the Combined Authority Board approved a new Business Plan and Medium-Term Financial Plan (MTFP), including Revenue and Capital projects for 2021/22. This report presents the progress made against these budgets along with any changes in line with subsequent Executive Committee and Board decisions.

3. Budget

Presentation of Variances

3.1 Members' attention is drawn to the change in presentation in this meeting's report – the sign used to show the direction of forecast variances has been changed to align with the reports produced for other Committees and the CA Board. As such positive variances represent forecast overspends and negative variances forecast underspends.

Revenue Budget

3.2 A summary of the financial position of the Authority, showing revenue expenditure for the eight-month period to 30th November 2021, is set out in the table below:

£000	Prior Years	2021/22 Approved Budget				2021/22 Total Budget		Future Yrs MTFP
	Actual	Actual	Budget Approved	Forecast	Var To Budget	Budget Subject to Approval	Total Budget	
REVENUE								
A141 (SOBC)	99	67	121	104	(17)	-	121	-
St Ives (SOBC)	-	100	138	137	(1)	-	138	-
Bus: Review Implementation	319	244	1,842	1,173	(669)	-	1,842	-
Bus Service Subsidisation (National Bus Strategy)	50	155	187	383	196	-	187	-
CAM Innovation Company	6,464	2	656	2	(655)	-	656	-
Local Transport Plan	657	36	200	200	-	-	200	100
Public Transport: Concessionary fares	-	3,960	9,129	9,129	-	-	9,129	27,387
Public Transport: Contact Centre	-	147	234	234	-	-	234	702
Public Transport: RTPI, Infrastructure & Information	-	-	209	209	-	-	209	627
Public Transport: S106 supported bus costs	-	258	259	259	-	-	259	777
Public Transport: Supported Bus Services	-	1,446	3,003	3,003	-	-	3,003	9,009
Public Transport: Team and Overheads	-	292	465	465	-	-	465	1,395
A142 Chatteris to Snailwell	-	-	-	-	-	150	150	-
Development of Key Route Network	-	-	-	-	-	150	150	-
Harston Capacity Study	-	-	-	-	-	150	150	-
Sawston Station Contribution	-	-	-	-	-	16	16	-
Segregated Cycling Holme to Sawtry	-	-	-	-	-	100	100	-
Transport Response Fund	-	-	-	-	-	650	650	1,950
REVENUE TOTAL	**7,588**	**6,706**	**16,444**	**15,298**	**(1,146)**	**1,216**	**17,660**	**41,947**

3.3. The outturn position shows a positive variance of £1.1m against the approved budget.

3.4. The closure of OneCAM was approved by the Combined Authority Board in October 2021. No further revenue expenditure is expected.

3.5. Bus Review Implementation is forecasting an underspend of £669k in relation to additional bus services support. This is partly offset by an overspend on Bus Service Subsidisation, of £196k. The budget funds three bus routes, but a fourth route is currently unbudgeted, creating an overspend position.

3.6. In addition to the £16.4m approved to spend budget, there is a further £1.2m budget in the MTFP for new projects which have not yet been taken to the Combined Authority Board for approval to spend.

3.7. There are currently no other material variations to the revenue budget.

Capital Budget

3.8. A summary of the capital programme for the eight-month period to 30th November 2021, is set out in the table below:

£000	Prior Years	2021/22 Approved Budget				2021/22 Total Budget		Future Yrs MTFP
	Actual	Actual	Budget Approved	Forecast	Var To Budget	Budget Subject to Approval	Total Budget	
CAPITAL								
A10 Junctions and Dualling (OBC)	-	-	2,000	100	(1,900)	-	2,000	-
King's Dyke Level Crossing	16,812	7,049	7,588	7,588	-	2,100	9,688	-
Soham Station	8,847	6,445	9,244	9,482	238	-	9,244	4,000
Wisbech Rail	1,514	29	306	306	-	2,688	2,993	8,000
Wisbech Access Strategy	2,439	1,970	2,739	2,739	-	0	2,739	-
Ely Area Capacity Enhancements	2,945	202	326	202	(124)	-	326	-
Coldhams Lane roundabout improvements	367	-	234	-	(234)	2,200	2,434	-
Fengate Access Study - Phase 1	495	282	327	317	(10)	1,330	1,657	4,200
University Access	199	146	161	161	-	660	821	1,280
March Junction Improvements	1,346	823	2,114	2,083	(31)	2,738	4,852	-
Regeneration of Fenland Railway Stations	790	1,203	2,610	2,657	47	674	3,284	-
A1260 Nene Parkway Junction 15	738	83	207	457	250	5,000	5,207	-
A1260 Nene Parkway Junction 32-3	615	129	239	239	-	5,030	5,269	1,500
A16 Norwood Dualling	134	180	626	510	(116)	420	1,046	12,000
A505 Corridor Royston to Granta Park	557	6	143	6	(137)	-	143	-
A605 Stanground - Whittlesea Access - Phase 2	2,128	-	217	-	(217)	-	217	-
Lancaster Way	1,678	260	500	387	(113)	-	500	-
Transport Modelling	-	20	750	554	(196)	-	750	-
CAM Investment - One CAM Operating	-	-	2,000	2,000	-	-	2,000	-
CAM Investment - Business Cases	-	-	250	150	(100)	4,750	5,000	13,000
Highways Maintenance Capital and Pothole Fund	102,225	27,695	27,695	27,695	-	-	27,695	83,085
St. Ives (SOBC, OBC & FBC)	-		-	-	-	500	500	3,900
Snailwell Loop	-	-	-	-	-	500	500	-
A141 OBC & FBC	-	-	-	-	-	-	-	4,250
CAPITAL TOTAL	**143,828**	**46,521**	**60,274**	**57,633**	**(2,643)**	**28,589**	**88,864**	**135,215**

3.9. The Capital programme outturn shows a £2.6m positive variance against the approved budget for the following reasons:

3.9.1. A10 Junctions and Dualling (OBC) –DfT's decision on its funding contribution was not communicated to the Authority until June. The Authority is now working with Cambridgeshire County Council to align the project with DfT requirements. This has impacted in the original timing envisaged for the OBC and as a result, the forecast spending has been reduced in the current financial year and will be increased in the following year. A re-profiling of the budget will be required, in line with the revised timing.

3.9.2. Soham Station – This project is currently being delivered ahead of schedule, hence the increase in the forecast for this financial year. This will be offset against the forecast spend for the 2022/23 budget.

3.9.3. Coldhams Lane – This project is currently on hold at the Committee's request while funding is sought to bridge a budget gap for the options the Committee considered offered best value for money.

3.9.4. A1260 Nene Parkway Junction 15 - £250k additional budget is required due to further design and surveys required for footbridge has been agreed.

3.9.5. A605 Stanground, Whittlesea Access Phase 2 – budget approved to cover an expected overspend on the project. Following a lower than estimated final account settlement, the budget is no longer required.

3.9.6. Transport Modelling – This project is being developed and it is likely to be completed in 2022/23, hence the reduction in the forecast spend for the current year.

3.10. CAM Investments – Operating and Business Cases – A paper to Combined Authority Board recommending the closure of OneCAM was approved by the board in October 2021.

3.11. There is £28.6m of 2021/22 budget still subject to board approval. This is being reviewed as part of the overall review of the Transforming Cities Fund programme reported to the September T&I Committee meeting.

4. Performance Reporting

4.1 The Cambridgeshire and Peterborough Devolution Deal is about delivering better economic outcomes for the people of our area and commits us to specific results. The Combined Authority needs to monitor how well it is doing that.

4.2 Appendix 1 shows the Transport Performance Dashboard. It includes an update on delivery against the following growth outcomes set by the Devolution Deal, which are reported to the Combined Authority Board:

- Prosperity (measured by Gross Value Added (GVA))
- Housing
- Jobs

The appendix also includes indicators relating to the Transport programme chosen by the Committee, to supplement the corporate headline indicators.

4.3 The Board in January will consider future performance reporting arrangements in support of the new Business Plan and Medium-Term Financial Plan. Performance metrics are also being reviewed as part of the Local Transport & Connectivity Plan. Following this we will be proposing adoption of new metrics to the Transport and Infrastructure Committee with a stronger outcome focus.

4.4 The project RAG ratings continue to be updated monthly as part of our standard management processes, and the appendix also includes ratings for the Combined Authority's transport projects based on outturn data from the end of December 2021.

5. Financial Implications

5.1. There are no other financial implications other than those included in the main body of the report.

6. Legal Implications

6.1. No significant legal implications.

7. Other Significant Implications

7.1. None not mentioned above.

8. Appendices

8.1. Appendix 1 – Transport Performance Dashboard

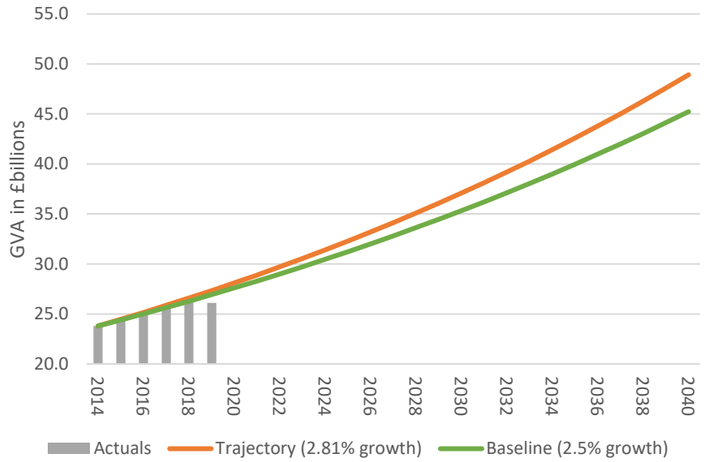
9. Background Papers

Sources:
Baseline: Current trend without Devolution Deal interventions
Outturn data source: GVA and Jobs - Office of National Statistics (ONS);
Housing - Council Annual Monitoring Reports/CambridgeshireInsights.

TRANSPORT AND INFRASTRUCTURE COMMITTEE

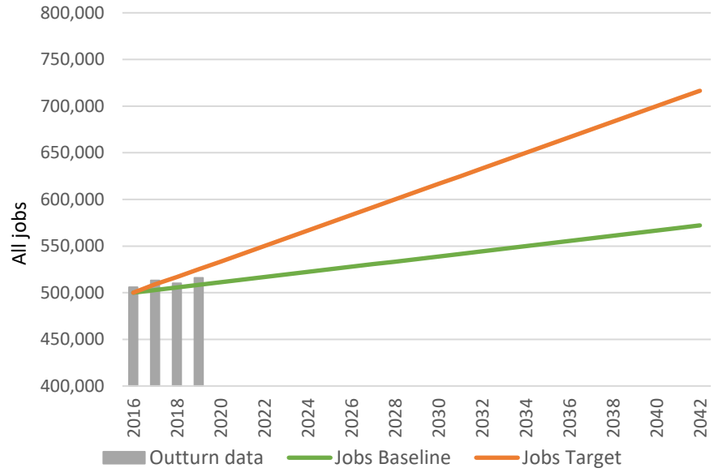
COMBINED AUTHORITY PERFORMANCE DASHBOARD
DEVOLUTION DEAL TRAJECTORY

GVA TARGET V BASELINE



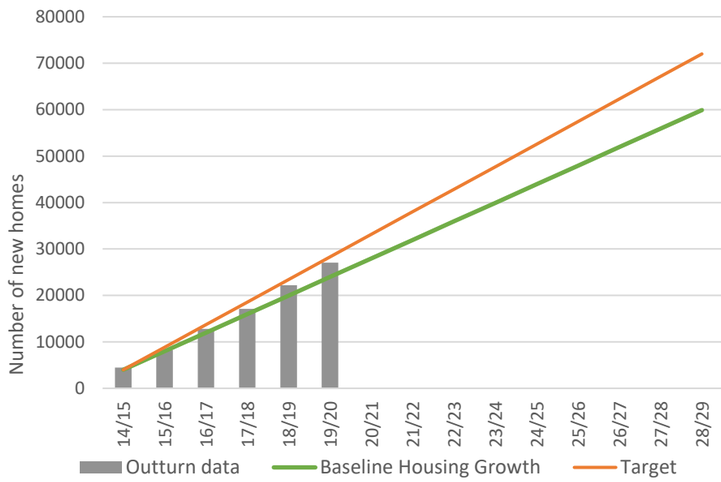
This has been updated in line with National Reporting standards. The CPCA Devolution Deal committed to doubling GVA over 25 years with 2014 as the baseline. To achieve this target the CPIER identified the region would require annual growth of 0.31% on top of the 2.5% baseline growth.

JOBS TRAJECTORY V BASELINE



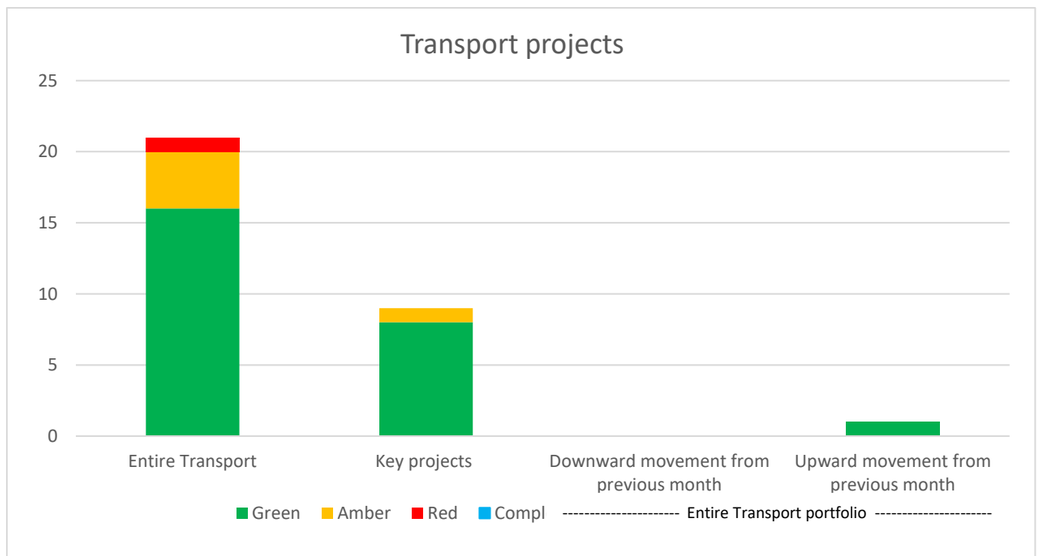
Target is derived through the CPIER by the GL Hearn report with a high growth scenario of 9,400 additional job growth per annum and a baseline of 4,338 jobs per annum.

HOUSING PERFORMANCE (*cumulative figures)



Devolution Deal target to deliver 72,000 new homes over a 15-year period. £170m affordable homes programme is expected to deliver over 2,500 additional homes.

Combined Authority Transport Project Profile



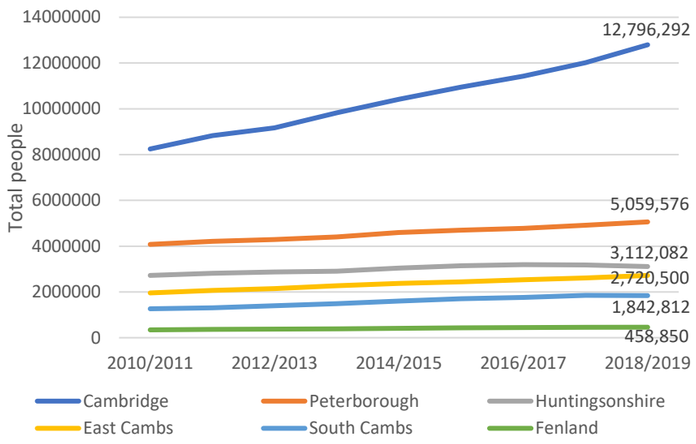
Transport Key Project Breakdown	
Project name	**RAG status**
A141 Huntingdon Northern Bypass SOBC	Green
A47 Dualling	Green
Bus Reform Task Force	Green
Cambridge South Station	Green
King's Dyke Level Crossing	Green
Regeneration of Fenland Stations	Green
Soham Station	Green
Wisbech Rail	Green
A10 OBC	Amber

*Project RAG status as at end of December 2021

Sources:
CambridgeshireInsight (2018)
Net Zero Cambridgeshire (2019)
Cambridgeshire City Council Traffic Monitoring Report (2018)
Department for Transport (2020)

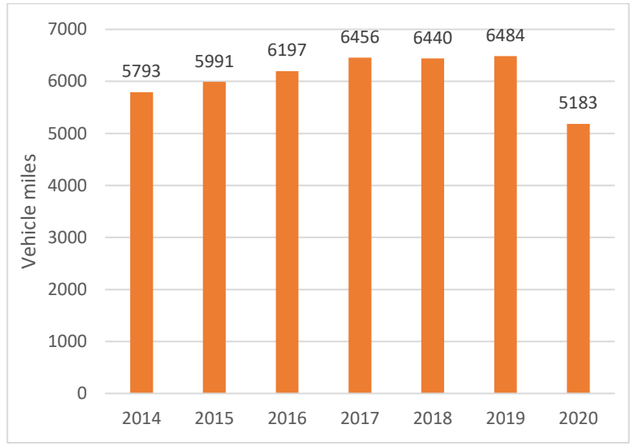
TRANSPORT METRIC REPORTING

Entries and Exits across all train stations by District



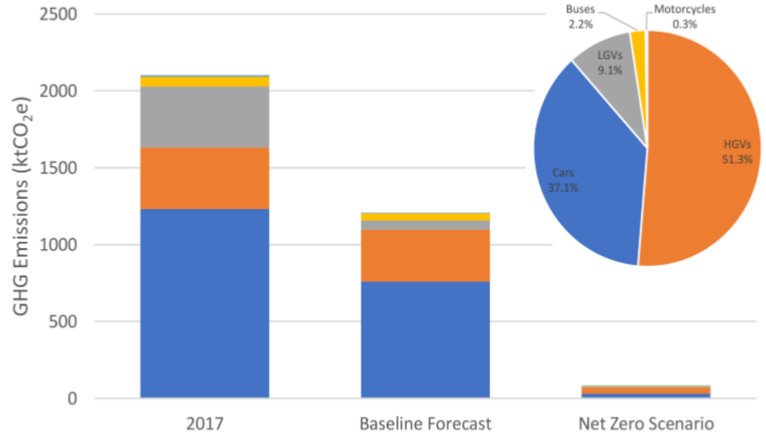
1.87m growth in station usage from 2016/17 to 2018/19

Motor Vehicle Traffic (Vehicle miles)



20% decrease in motor vehicle traffic from 2019-2020

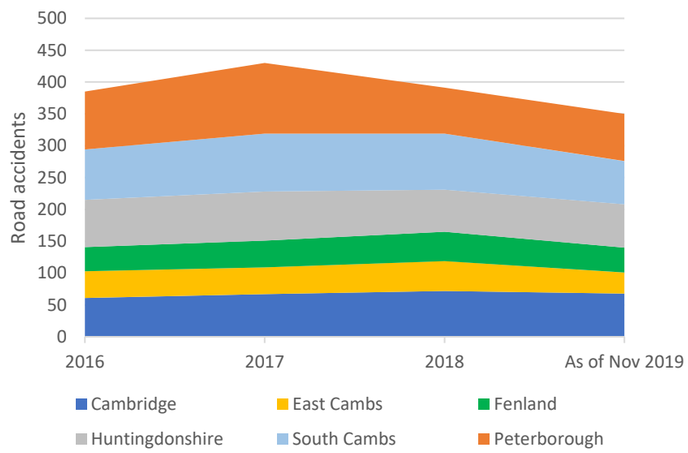
Total Green House Gas emissions for road transport (Cambridgeshire and Peterborough)



*Emissions in 2050 for the baseline projection and emissions in 2050 for the net zero scenario

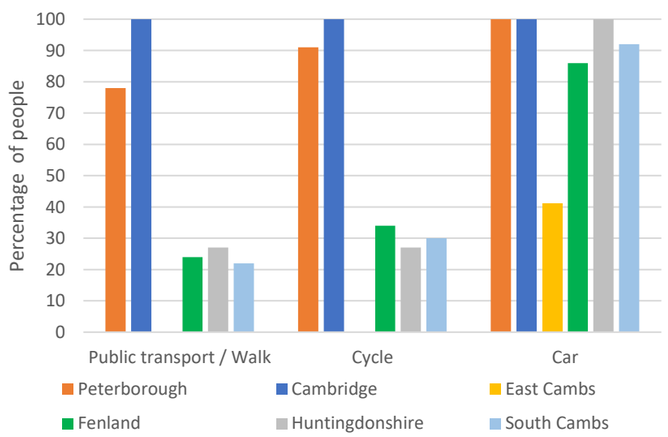
97% of transport emissions from road traffic; the major contribution from traffic on A-roads

Total serious and fatal (KSI) road collisions by District



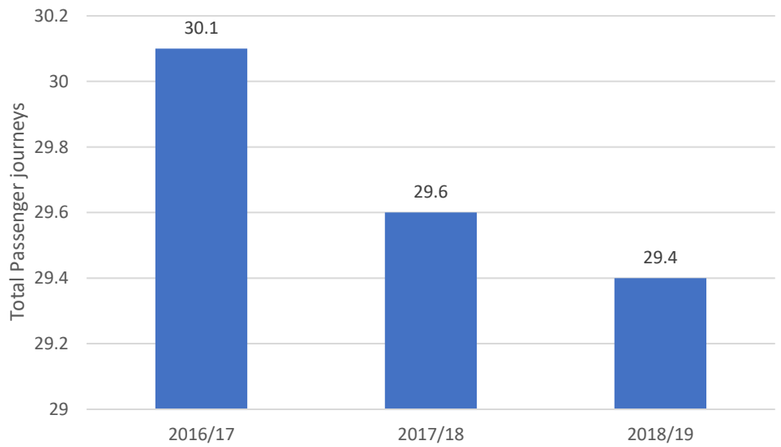
9% reduction in serious and fatal road collisions from 2017 to 2018

Within 30 mins travel of major employment centres (2017)



>95% of residents within 30 mins of a major employment centre

Passenger journeys on local bus services (Cambridgeshire and Peterborough)



3% decrease in bus usage from 2016/17 to 2018/19